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MAJOR CROP PROGRESS AND WEATHER REPORTING

MEASURES FOR COMBATING WHEAT PESTS IN MOLDAVIA

Kishinev SOVETSKAYA MOLDAVIYA in Russian 22 Oct 81 p 3

[Article by M. Bronskikh, head of the Department of Plant Protection at the Selektsiya Scientific Production Association: "Protection for Winter Wheat"]

[Text] Route inspections carried out on wheat plantings have uncovered centers of infestation by the larvae of grain beetles. The population density for this pest is especially high on tracts in the southern regions where the sowing work was carried out early.

Following the precipitation which fell during the first 10 days in October, the pest increased in number by a factor of 1.8-2.2, thus posing a considerable threat to the winter wheat planted following stubble crop predecessor arrangements. One peculiarity noted this year is the fact that the larvae, in addition to the leaves, have begun shredding the stalks of the plants. At the same time, the degree of damage being inflicted by them is increasing considerably.

The situation out on the fields is changing very rapidly at the present time. In this regard the plant protection specialists, agronomist-field crop growers and brigade leaders must organize mass inspections of the crops on an urgent basis and in a manner such that each tract is inspected no less often than once every 2-3 days.

The field treatment work should be carried out first of all and immediately on those fields where the population density of the beetles exceeds 10-15 larvae per square meter. If the soil is very damp and complete treatment is impossible, then fringe dusting (to 35-50 meters) should be carried out using 12 percent GKhTsG [hexachlorocuclohexane] (20 kilograms per hectare) and thereafter, as the soil drys out, complete dusting should be conducted using the more effective valaton (2 kilograms per hectare) and bazudin (2 kilograms per hectare) preparations. Use can also be made of bazudin with phosphamide (1.5 + 1 kilogram per hectare).

Following the above, work should be carried out aimed at eliminating centers of infestation on fields where there are 5-6 and up to 10 larvae per square meter. Towards this end, use can be made of bazudin (2 kilograms per hectare), a mixture of bazudin with phosphamide, a 16 percent gamma-isomer of GKhTsG (2-2.5 kilograms per hectare), a mixture of the latter with phosphamide (1.5 + 1 kilogram per hectare) or metaphos (1.5 + 1.0 kilograms per hectare). Subsequently, fields having

a pest population density of 3-4 larvae per square meter should be treated. Here the treatment is carried out using a 16 percent gamma-isomer of GKhTsG or a mixture of the latter with phosphamide and metaphos (1.2-1.5 kilograms per hectare). If the mentioned preparations are not available, the seedlings can be dusted using 12 percent GKhTsG (20 kilograms per hectare). This agricultural method must be carried out early in the morning, following a heavy dew and in windless weather.

It should be remembered that the treatment work should be repeated following rainfall. Under usual conditions, they are repeated upon the expiration of 8-10 days following the first treatment, until the centers of infestation of the pest are completely eliminated. On those fields having centers of infestation of the pest, only these centers and the areas around them are treated. If a need arises for "repairing" the damaged tracts, then resowing is carried out together with a simultaneous application of granulated phosphamide (100 kilograms per hectare) or 2 percent GKhTsG (50 kilograms per hectare).

Thorough and regular inspections of the fields and the carrying out of chemical treatment work will ensure success in combating the grain beetle. This requires that the agronomic services devote constant attention, during the months of October and November, to ensuring that no active centers of pest infestation remain for the spring period, at which time it will be far more difficult to combat them.

7026
CSO: 1824/084

MAJOR CROP PROGRESS AND WEATHER REPORTING

BRIEFS

WINTER CROP SOWING COMPLETED--Kishinev, 6 Oct--The machine operators of Moldavia have completed sowing their winter crops. The republic's grain fields occupy 400,000 hectares. The Odesskaya-51 variety, which is well suited for local conditions, has been sown on a large portion of the winter crop fields. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 7 Oct 81 p 1] 7026

AUTUMN PLOWING PROBLEMS--Each autumn day imposes strict requirements upon the farmers. It is during this period that zealous individuals strive to harvest and preserve all of the products grown, fulfill their plans for selling them to the state, provide good wintering conditions for the livestock and establish a firm foundation for next year's harvest. The farmers in Rezinskiy, Ungenskiy, Chadyr-Lungskiy and Kriulyanskiy Rayons are making efficient use of their equipment and carrying out high quality preparations for the autumn plowing work. The grain growers in Grigoriopol'skiy, Kamenskiy, Tarakliyskiy and Chimishliyskiy Rayons have intensified their soil cultivation work. Here the daily output per plowing unit is 10-9 hectares. However the managers, specialists and party organizations are not undertaking the proper measures aimed at ensuring efficient use of the powerful agricultural equipment, nor are they creating the conditions required for ensuring highly productive work by the machine operators. At many kolkhozes and sovkhozes the plowing units are being operated only during one shift, constant control is not being exercised over the quality of the work being carried out and use is not being made of all measures available for issuing moral and material incentives to the machine operators. Autumn plowing work is not being carried out at night on farms in Ryshkanskiy, Bessarabskiy and a number of other rayons. This work is being conducted at a slow tempo in Lazovskiy and Brichanskiy Rayons, where 5,000-7,000 hectares of free area still remain to be plowed. In Vulkaneshtskiy and Droknevskiy Rayons the post-harvest residue was not removed from the fields in a timely manner and this is delaying preparation of the soil. In Kotovskiy and Lazovskiy Rayons the daily output per plowing unit is only 4-3 hectares. The quality of the soil cultivation work being carried out on the fields of individual farms in Orgeyevskiy Rayon is low. At the Kolkhoz imeni Karl Marx (Chairman A. Guzha), the plowing work is being carried out in the absence of skim coulters and harrows and the post harvest residues are not being worked into the soil. A similar situation prevails at the Put' K Kommunizmu Interfarm Association for Feed Production (chairman of the association A. Mal'vinov). Low plowing rates are being observed at the Feteshtskiy and Kaynarskiy Sovkhozes, at the leading farm of the Zarya Scientific Production Association, at the Chadyr-Lungskiy Sovkhoz and at

the leading farm of the Progress Scientific Production Association of the republic's Ministry of Agriculture. The party organizations and leaders and specialists of kolkhozes, sovkhozes, sovkhoz-plants, interfarm, agroindustrial and scientific-production associations must undertake urgent measures aimed at improving the organization of plowing operations and they must do everything possible to ensure the creation of a reliable foundation for the spring crop harvest during the second year of the Eleventh Five-Year Plan. [Excerpts] [Kishinev SOVETSKAYA MOLDAVIYA in Russian 14 Oct 81 pp 1-3] 7026

LOW PLOWING RATES--During these autumn days the agricultural workers are directing all of their efforts towards harvesting completely all of the late crops and establishing a strong foundation for next year's harvest. The farmers in Kutuzovskiy Rayon are setting a fine example in this regard. More than 3,500 tons of mineral fertilizer and 135,000 tons of organic fertilzer were applied during autumn plowing. However, this work is not being carried out in an organized manner in all areas. Owing to a lack of control on the part of the party organizations and managers and specialists on a number of farms in Kotovskiy and Lazovskiy Rayons, over the observance of the schedules for around-the-clock use of equipment, the daily output per unit amounts to only 3-4 hectares. Autumn plowing work is being carried out in a slow manner at the Bel'tskiy and Draganeshtskiy Sovkhozes in Lazovskiy Rayon, at the Sovkhoz imeni Kotovskiy in Kaushanskiy Rayon and at the Leovo Sovkhoz-Technical School for Agricultural Mechanization. On some farms in Teleneshtskiy Rayon the plowing units were not equipped with harrows or rollers for breaking up the soil and this lowered the quality of the autumn plowing work considerably. At the Kolkhoz imeni Chapayev in Bessarabskiy Rayon, neither disking nor crushing of the post-harvest residue were carried out following the harvesting of the crop. Here the results of the socialist competition are not being summarized in a timely manner. The preparation of soil in behalf of spring crops on farms of the Vulkaneshty and Teleneshty agroindustrial associations of Moldvinprom is being delayed owing to weak organization of the work associated with the harvesting and removal of vegetables, tobacco and corn from the tracts. A popular wisdom holds that "the ears commence ripening in the autumn." This fact must be borne in mind by all who participate in the fate of the harvest for the second year of the five-year plan; they must display constant concern for timely and high quality autumn plowing work, which serves to multiply the strength of the spring crop fields. [Excerpts] [Kishinev SOVETSKAYA MOLDAVIYA in Russian 22 Oct 81 p 3] 7026

CSO: 1824/084

LIVESTOCK

UDC 631.1:658.387

INDUSTRIALIZING RSFSR BEEF PRODUCTION

Interfarm Development in Orenburg

Sverdlovsk URAL'SKIYE NIVY in Russian No 10, Oct 81 pp 15-17

[Article by Yu. Nagayev, head of the Sector for Regional Agrarian Studies at the Institute of Economics, Ukrainian Scientific Center, USSR Academy of Sciences; M. Gurova, head of the Administrative Department at the Orenburg Agricultural Institute; M. Tishina, graduate student: "Effectiveness of Control Over Beef Production on an Interfarm Basis"]

[Text] The following statement is found in the "Basic Directions for the Economic and Social Development of the USSR During the 1981-1985 Period and For the Period Up To 1990," approved by the 26th CPSU Congress: "the per capita increase in agricultural output will be twice as high as the figure for the preceding five-year plan. In order to achieve this, it will be necessary to make better use of the land, raise the level of specialization and concentration in agricultural production and continue to strengthen the logistical base for agriculture, while converting it over to an industrial basis and to a progressive technology."

In Orenburgskaya Oblast, a long-range plan had been prepared for the Tenth Five-Year Plan for the development of animal husbandry, with consideration being given to converting the branch over to an industrial basis. As a result of implementation of this plan, the oblast's agricultural enterprises increased their production of beef in 1980 by a factor of 1.4 above the figure for 1966.

The search for and introduction of reserves into production operations involved not only matters of a technological nature but also the system of control. The composition and structure of farms engaged in the production of beef have changed considerably in recent years. Fattening sites which operate on an interfarm basis are now in operation on the farms and state-kolkhoz associations have made an appearance. These changes are reflected in the table (see Table 1).

The data cited in the table testifies to the fact that the principal increase in output was achieved as a result of the cooperative process taking place in animal husbandry.

On the whole, the average annual volume of beef production for the oblast has increased from one five-year plan to the next and during the 1976-1979 period it

increased by 25,500 tons above the figure for 1966-1970. At the present time, up to 50 percent of all fattened large-horned cattle are passing through MKhO's [mezhkhozyaystvennoye gosudarstvenno-kolkhoznoye ob"yedineniye; interfarm state-kolkhoz association] and MKhP's [mezhkhozyaystvennoye predpriyatiye; interfarm enterprise].

With the intensification of production specialization and concentration and the conversion over to interfarm cooperation, the structure of control is also changing and being developed in accordance with the branch principle at all levels, commencing with the union-republic level. Within the RSFSR Ministry of Agriculture, a Chief Inspection for Interfarm Cooperation and Agroindustrial Integration has been created and at OPUSKh -- a department for specialization and concentration based upon interfarm cooperation. The Skotoprom Trust has a similar department. Councils of shareholder farms and their boards have been formed at the rayon level of control. Mechanized interfarm sites for the fattening of large-horned cattle have become the primary production subunits of the base farms.

With the development of the interfarm cooperative process and production-economic strengthening of the interfarm sites, corrections were entered into the system of control. At the present time, there are two types of management in the oblast for the council boards: they are headed either by the chiefs of rayon agricultural administrations or the leaders of base farms. The base farms of OPUSKh are presently performing the functions of MKhP's, while sovkhozes within the Skotoprom Trust system, where interfarm fattening sites are in operation, have converted over to the category of MKhO's.

Concentration and specialization have resulted not only in reorganization of the system of control but also in changes in the technology and in the organization of beef production. Earlier the kolkhozes and sovkhozes fattened their own large-horned cattle, with one of their farms specializing in this work. Use was usually made of farm yards and cow barns adapted for this purpose, with industrial fattening being practically impossible. Owing to a weak feed base and insufficient attention being given to this branch of animal husbandry by the managers and specialists, the fattening of large-horned cattle was laborious and ineffective. Thus, during the 1966-1970 period, labor expenditures per quintal of live weight in KRS [large-horned cattle], for the oblast on the whole, amounted to 48.4 man-hours and feed expenditures -- 10.2 quintals of feed units. At the Skotoprom Trust the figures were 39.1 and 9.5 respectively. In the early 1970's, they began concentrating cattle fattening operations at mechanized seasonal (summer) sites, each having a capacity for 400 head.

The next stage in the conversion of beef production over to an industrial basis involves the creation of interfarm mechanized sites which are in operation 12 months of the year rather than just on a seasonal basis. Five such experimental installations appeared in the oblast in 1973. One of them commenced operations at the Pylayevskiy Sovkhoz in Pervomayskiy Rayon. Four kolkhozes and two sovkhozes commenced operating on a cooperative basis based upon this site. They delivered 3,742 head of large-horned cattle stock for fattening purposes.

Over a period of 1 year the Pylayevskiy Sovkhoz succeeded in raising the average daily weight increase per head to 800 grams and it supplied the state with 1,365

TABLE 1

Dynamics of Average Annual Beef Production in Orenburgskaya Oblast, in percent

Farms	1966-1970	1971-1975	1976-1979
Kolkhozes	37.5	40.3	43.1
including MKhP's*	-	1.0	6.3
Sovkhozes	25.4	28.2	33.1
including MKhP's	-	0.6	4.3
Skotoprom	2.3	2.7	6.7
MKhO's**	-	0.3	6.2
Subsidiary farms of enterprises	4.5	2.3	0.2
Private plots	32.6	29.2	23.6
Total	100	100	100
including in the public sector	67.4	70.8	76.4

* MKhP -- farms which perform the functions of interfarm enterprises
** MKhO -- interfarm state-kolkhoz associations

animals, the average live weight of which was 390 kilograms. For the oblast as a whole, the indicator for this year equalled 332 kilograms and for Pervomayskiy Rayon -- 363 kilograms. The production cost for 1 quintal of weight increase in cattle obtained at a mechanized site was 86 rubles and at sovkhozes in the rayon -- 141 rubles.

Upon summarizing this experience, the oblast CPSU committee and the oblast executive committee adopted a decree in 1974 calling for the construction of 34 (in each rayon) interfarm mechanized fattening sites for 1,600 head each (54,000 head at one time). Funds for the creation of these sites were invested by 287 kolkhozes and 89 sovkhozes.

The sites were erected using the resources of industrial enterprises and construction, transport and other organizations in the form of patronage assistance. The sites were built rather quickly (6-8 months) and this made it possible, during the same year, to fatten 19,400 head of cattle at them to an average delivery weight of 380 kilograms, with an average daily weight increase in the animals of 788 grams. The production cost per quintal of weight increase in live bulk was 84 rubles. The expenses incurred for building the sites were reimbursed during the first year of operation. The average daily weight increase turned out to be higher by a factor of two and feed and labor expenditures were less by factors of 1.2 and 5.3 respectively than the figures for farms which carried out fattening operations on an individual basis.

Such fattening sites consist of units for 800 head each, divided up into eight pasture-feeding plots. Between the feeding troughs there is a feeding passage 2.3 meters in width; it divides the yard into two halves. The plots are equipped with ATK-4 automatic watering bowls, with electrically heated water (for use during the winter). All feed is issued by means of mobile feed distributors: coarse and succulent feed with the aid of a KTU-10, concentrates -- KUT-3A and the farmyard manure is removed by bulldozer as it accumulates. The cattle are maintained based upon the loose housing system. For the resting of the animals, the facilities are equipped with stalls with straw bedding and in the exercise yards -- "mounds" consisting of farmyard manure and straw.

TABLE 2

Efficiency of Beef Production in Orenburgskaya Oblast in 1976-1979

Type of Farm	Number of Farms	Expenditures Per Quintal of Weight Increase		Production Cost Per Quintal, in Rubles
		Feed Units	Man-Hours	
Sovkhozes	144	13.3	30.7	168.0
Kolkhozes	357	11.9	40.16	157.0
Skotoprom Trust	22	12.8	32.7	129.1
MKhP	29	10.4	7.9	123.65
MKhO	18	15.2	8.1	119.70
Ilekskiy MKhP	1	9.1	5.0	115.54
For the oblast	-	12.6	35.4	162

The cattle are fattened using mainly internally produced coarse and succulent feed. The feed is supplied to the animals in the form of semi-damp mixtures, which are prepared in feed preparation shops. Extensive use is made of granules made from straw and concentrated feed. A high level of cattle concentration makes it possible to maintain them in large groups, to employ highly productive machines here and, on this basis, to achieve a high level of labor productivity. At a majority of the fattening sites, each operator-machine operator services 200-250 head and at some sites -- up to 350-400 head. At kolkhozes and sovkhozes throughout the oblast, the workload per individual herdsman does not exceed 50 units of large-horned cattle. The sites are serviced by specialized brigades which operate in accordance with the team principle.

The advantages offered by fattening sites were not ignored and in 1979 their capability reached 142,400 head of cattle that could undergo fattening at one and the same time, an increase of 2.7 times. At that time, 22 percent of the beef was obtained from these sites and the profitability level was 42 percent. Sites capable of accommodating more than 3,000 animals are the most profitable ones. At MKhO's and MKhP's, labor expenditures are 77 percent less, feed consumption 4.8 percent less and the production cost per quintal of weight increase 24.4 percent less than the figures recorded for farms.

There are presently 47 sites for the fattening of large-horned cattle within the oblast, with 18 belonging to the Skotoprom Trust and the remaining ones -- to OPUSKh.

The data furnished in Table 2 provides information on the efficiency of beef production carried out on an interfarm basis.

Cooperation among farms in the production of beef is carried out only within the borders of administrative regions. In addition to bringing about a change in the organizational principles under which a farm is managed, this process also intensifies the branch principle of production control. A departmental structure for production control has been introduced into operations on a majority of the farms having their own interfarm mechanized sites.

TABLE 3

Production-Economic Operational Indicators for the Ilekskiy MKhP in the Fattening of Large-Horned Cattle

Indicators	1974-1975	1976-1979
Total number of cattle billets	1600	3200
Gross weight increase, quintals	3926	29056
Daily weight increase, grams	674	780
Number of head delivered	1578	11457
Total weight, quintals	6340	42783
Delivery weight of an animal, kilograms	421	431
Production cost for 1 quintal, rubles and kopecks	86.88	115.54
Feed expenditures per quintal of weight increase, in quintals of feed units	9.4	9.1
Labor expenditures per quintal of weight increase, in man-hours	6.6	5.0
Profit, thousands of rubles	366.6	3693.8

The effectiveness of industrial fattening of large-horned cattle can be seen by studying the example of the Ilekskiy interfarm mechanized fattening site. It was built using the funds of four shareholder-kolkhozes and it entered operations in October of 1974. The balance cost for one cattle billet -- 292 rubles.

The interfarm fattening site, the maintenance expenses of which are financed separately, is a cost accounting subunit of the Kolkhoz imeni Chapayev and its accounts are maintained by the farm's bookkeeping office. Here labor is organized according to the team principle, all of the animals are serviced by 12 machine operators and the workload for one machine operator is 266 head. Data on its activities is furnished in Table 3.

The cattle are fattened using mainly feed obtained from the base farm -- such feed constitutes 87.7 percent of the overall requirement.

The concentration of cattle fattening operations has raised the efficiency of animal husbandry in Ilekskiy Rayon. In 1979 the production of large-horned cattle meat increased by 49 percent above the figure for 1970, with the interfarm fattening site accounting for 39 percent of this increase.

A council of kolkhoz-cooperation specialists is the highest organ of control at an interfarm site for the maturing and fattening of large-horned cattle. It consists of 21 individuals, including the chief specialists of the rayon agricultural administration, the chairmen and zootechnicians of cooperating kolkhozes and the chief of the fattening site. The council convenes once each quarter. For the operational solving of production problems, the council elects an administration consisting of five individuals; the manager of the base farm is the chairman of this council. The council's administration ensures fulfillment of the tasks concerned with production output and operational management, it examines problems associated with the status of labor safety techniques, it introduces scientific and engineering achievements into operations, it approves plans and annual reports and it controls the distribution of profits among the farms.

Up until recently, there were two types of interfarm formations for the industrial fattening of large-horned cattle in the oblast -- rayon state-kolkhoz associations and farms which perform the functions of interfarm enterprises. This year the associations have been abolished and only those farms which perform the functions of interfarm enterprises (including sovkhozes of the Skotoprom Trust) remain.

We believe that in order to improve production activity and control over interfarm formations in the oblast, the base farms of the PUSKh system which have interfarm fattening sites should ideally be included in the category of interfarm enterprises. Indeed, for all practical purposes their tasks coincide with the functions of the farms mentioned above.

Beef Production Efficiency Outlined UDC 636.088.31

Moscow SEL'SKOYE KHOZYAYSTVO ROSSII in Russian No 11, Nov 81 pp 40-42

[Article by D. Levantin, professor and head of the Department of Beef Production and L. Komarov, candidate of agricultural sciences: "Efficiency of Beef Production at Industrial Complexes"]

[Text] Success in implementing the food program is today greatly dependent upon the status of affairs in livestock husbandry, which supplies the population with meat products and particularly beef. During the past five-year plan, animal husbandry production on farms in the RSFSR increased by 7 percent. A considerable increase must take place in the rates of growth during the next few years. Such is the task that was assigned to the branch's workers by the 26th CPSU Congress. The congress pointed out the methods to be employed for carrying out the plans. Young large-horned cattle stock must be raised in a more intensive manner, the fattening periods must be shortened and a considerable increase must be achieved in the amount of products being obtained from each head of cattle.

Unfortunately, only 60-65 percent of the meat potential is being utilized at the present time throughout the republic in the production of beef. This is borne out by the productivity indicators achieved: the beef yield per head of cattle is 61 kilograms and the average live weight of animals sold -- 362 kilograms. Meanwhile, leading experience indicates that meat production per head can reach 75-85 kilograms and the average weight for cattle sold -- 398-430 kilograms.

During 1979 the farms of Russia sold 3.2 million head of heavy young stock to the state, with the average live weight being 416 kilograms, including 1.6 million head the average live weight of which was 448 kilograms. At the same time, roughly 5 million head (60 percent of the young stock sold) had weights less than 350 kilograms. Moreover, 1 million head were in poor condition when sold, with their live weight being less than 200 kilograms.

A most important means for raising the live weight of young stock is that of expanding the scale of fattening operations and raising the intensity of feeding, especially during the final period. In addition, this will make it possible to improve the condition of the cattle and increase the dressing percentage of the carcasses.

An additional reserve for increasing the production of beef -- the final fattening of adult rejected cattle, a large portion of which are in poor condition when sold for meat purposes. During 1979 and 1980, the farms annually sold almost 4 million rejected cows to the state. Their average weight was 405 kilograms. Almost 40 percent of these animals were accepted in a lower than average or poor state of nourishment. An expansion in the scales of fattening work for young stock and adult rejected cattle is making it possible to obtain 350,000-400,000 additional tons of beef.

For solving the tasks under discussion in this article, an increasing role must be played today by those specialized enterprises having an industrial production technology at their disposal. Among the Skotoprom farms there are some highly intensive enterprises. This includes, for example, the sovkhozes Vertunovskiy (4,200 cattle billets) and Rossiya (5,500) in Penzenskaya Oblast and Liskinskiy (6,600) in Voronezhskaya Oblast. The capital-labor ratio for one worker here is 70,000 rubles. The combining of such important factors as production concentration and intensification is ensuring rather high technical-economic indicators for their operation. Each year the Vertunovskiy Sovkhoz sells 10,000 head of young stock to the state. These animals are fattened on pulp residue and their average live weight is 442 kilograms. The average daily increase in weight is 802 grams and feed consumption for each quintal of weight increase -- 9.1 quintals of feed units. The production cost per quintal of weight increase is not very high -- 119.1 rubles.

Over the past few years, a considerable increase has taken place in the RSFSR in the number of interfarm enterprises engaged in the fattening of cattle. There are 103 such enterprises in operation in the republic and they have 580,000 cattle billets at their disposal. Over the course of a year, they fatten and sell to the state 535,000 head of young stock at an average live weight of 384 kilograms. They furnish more than 1 million quintals of gross weight increase, with the average daily weight increase being 550 grams. Feed consumption per quintal of weight increase is 9.9 quintals of feed units. Although these indicators are not very high, they are nevertheless better than the results obtained by kolkhozes and sovkhozes and they ensure more rational use of the feed and profitable beef production.

The experience of many interfarm enterprises reveals that the efficiency of beef production can be raised even with the capital-labor ratio already achieved (it amounts to 50,000-70,000 rubles per worker). For example, in 1979 26,700 head of cattle were fattened on pulp residue and sold to the state at the Mtsensk MKhP (Orlovskaya Oblast) (in 1978 -- more than 30,000 head), with the average weight being 391 kilograms . The gross increase in weight for the year was 35,700 quintals. Approximately 7.9 quintals of feed units were expended for 1 quintal of weight increase, with the average daily weight increase being 914 grams. The production cost per quintal of weight increase -- 106 rubles. High technical-economic indicators were achieved owing to the fact that the young stock assigned to pulp residue fattening, after they had attained a weight of 260-300 kilograms, were provided with protein-balanced rations, with extensive use being made of phosphorus mineral supplements. During the summer they are fed grass fodder and also silage and haylage.

The fattening of cattle is being carried out in a highly efficient manner in Voronezhskaya Oblast. The Sadovskiy Interfarm Enterprise has a production capability for handling 11,000 head of cattle. Approximately 37,000 quintals of weight increase are obtained here ea h year, with 10,500 head of fattened young stock being sold to the state at an average live weight of 399 kilograms. The average daily weight increase at this complex is 918 grams, 6.8 quintals of feed units are expended per quintal of weight increase and the production cost for 1 quintal -- 94.7 rubles. High indicators have also been achieved by the Zarya, Mayak and Pobeda complexes.

Further improvements in the efficiency of cattle fattening operations and an increase in beef production are associated to a considerable degree with the introduction of a complete production cycle into operations at specialized farms, a cycle which includes the raising of calves and the maturing and fattening of young stock. Such a technology makes it possible to utilize more completely the genetic potential of animal productivity, lower the age at which they are slaughtered and expend feed in a more thrifty manner per unit of weight increase. This is borne out by the experience of many large state and interfarm complexes.

Production operations are carried out continuously and on a flow line basis at such enterprises, with the labor of the workers being mechanized. The intensive raising and fattening of young stock, throughout the entire production cycle, are carried out using balanced rations that include special mixed feed. This makes it possible to achieve high results.

For example, in 1980 the Yumatovskiy complex in the Bashkirskaya ASSR sold 9,700 head of young stock at an average weight of 487 kilograms. The daily weight increase per head amounted to 1,025 grams. In all, 4,261 tons of weight increase were obtained. For each quintal of weight increase, 5.6 quintals of feed units were expended. The production cost per quintal -- 105 rubles. Roughly the same indicators are being achieved at the Voronovo complex in Moscow Oblast, Dubrovskiy complex in Chelyabinskaya Oblast, Druzhba complex in Vologodskaya Oblast and at the Valuyskiy complex in Belgorodskaya Oblast.

In recent years, in addition to cattle being raised in facilities of the closed type, the cost of which is rather high, extensive use has been made of fattening operations carried out at sites. The results of experiments and an analysis of the work of fattening sites reveal that the erection of the latter for final fattening purposes leads to a reduction in expenditures for construction materials, fuel and electric power. At the same time, the operation of such sites during inclement autumn and winter weather tends to lower the weight increases considerably and, at the same time, it raises the consumption of feed. The differences in weight increases and feed expenditures are the same for favorable and unfavorable seasons regardless of the type of site or the zone in which it is located. Compared to the spring and summer months, the increases in weight obtained during the autumn and winter months reflect a reduction of 13-38 percent, with feed consumption increasing simultaneously by 19-68 percent. (see Table).

Production experience and scientific studies have shown that the fattening technology, the cattle maintenance conditions at sites and their planning solutions must take

Sites	Type of Site	Annual Average		Indicators By Periods			
				May - October		November - April	
		Daily Weight Increase, in grams	Feed Consumption Per Kilogram of Weight Increase, in feed units	Daily Weight Increase, in grams	Feed Consumption Per Kilogram of Weight Increase, in feed units	Daily Weight Increase, in grams	Feed Consumption Per Kilogram of Weight Increase, in feed units
Bratskaya, in Rostovskaya Oblast	Open	811	10.5	998	7.8	623	13.1
Sites in Orenburgskaya Oblast	Facilities with exercise, feeding yards	702	9.0	832	8.8	518	12.4
Kostrovskiy Sovkhoz in Moscow Oblast	Three-sided shed and site	762	10.7	895	8.5	630	11.3

into account the natural-economic peculiarities of the zone. They must ensure minimal losses in weight increases during the autumn and winter and prevent excessive feed expenditures.

At the same time, the extensive use of sites is making it possible to expand the scale of cattle fattening operations, with comparatively small capital investments, to mechanize feeding operations completely and to lower labor expenditures. Greater use must be made of fattening sites that are interlocked with simplified facilities for the resting of animals on deep bedding or in boxes. During months marked by unfavorable weather conditions, the final fattening should ideally be carried out in closed facilities, with use being made of the loose housing (small group) system of maintenance or stanchion maintenance for the animals (especially non-castrated young bulls). In the case of experiments carried out at VIZh [All-Union Scientific Research Institute of Livestock Breeding] during the final fattening of young bulls, at a site and over a period of 61 days during the autumn and winter months, the average daily weight increase was 680 grams and feed consumption per kilogram of weight increase -- 14.9 feed units. Such young bulls, when delivered for final fattening at a facility, furnished an average daily weight increase of 1,036 grams, with feed expenditures per kilogram of weight increase being 8.5 feed units. As a result, over a period of 337 days of maturing and fattening at a site, the average daily weight increase of the bulls reached 864 grams and when maintained at a site with final fattening in a facility -- 945 grams. In the process, the feed expenditures for the weight increase decreased by 12 percent. It is obvious that open fattening sites must not be employed on a year-round basis in a majority of the zones; they can be operated successfully only for seasonal fattening during periods marked by favorable weather conditions.

The conversion of beef production over to an industrial basis and the intensification of cattle raising and fattening operations are quite often accompanied by an increase in expenditures of concentrated feed. This is not always justified from a zootechnical or economic standpoint. Unfortunately, concentrates are

employed on many farms for compensating for a shortage of or low quality in the coarse and succulent feed. Thus one priority task is that of improving the quality of the coarse, succulent and green feeds and also utilizing the waste products of the food industry, pulp residues and malt residues in the livestock rations.

Studies carried out at the All-Union Institute of Feed have shown that the use of low quality silage during fattening leads not only to a reduction in weight increases but also to an increase in the consumption of concentrated feed. Thus, during a period of 90 days given to fattening youngstock on rations consisting of 1st class silage and concentrates, the average daily weight increase amounted to 821 grams, with 2.4 kilograms of concentrates being fed to the animals per kilogram of weight increase; with the same rations, but using poor grade silage, the weight increase was 616 grams and the consumption of concentrates per kilogram of weight increase increased to 3.3 kilograms. It was established during these same experiments that the digestibility of the dry substance of good silage is 67.7 percent and that for poor grade silage -- only 59.8 pe ent.

In order to raise the effectiveness of fattening carried out based upon pulp residue and malt residue, protein-vitamin and mineral additives must be introduced into operations on an extensive scale and the production of dry pulp residue and grass meal increased. The inclusion of these components in a ration raises its biological value, improves the utilization of nutrients and makes it possible to lower the expenditures of concentrated feed and to raise the state of nourishment of the cattle.

An important means for lowering the proportion of grain forage employed in the raising of cattle is that of differentiated feeding of the animals in accordance with the phases and periods of the production cycle, the use of complete ration feed mixtures in the form of granules and briquettes and the feeding of grass meal and cuttings. In terms of their nutritional value, prepared grass briquettes obtained from alfalfa and cereal grain crops occupy an intermediate position between hay and concentrates. Fine results are being obtained from the use, in granulated feed mixtures, of straw that has been treated with an alkali (up to 40-60 percent by weight).

During experiments carried out at the Mikheykovskiy Sovkhoz in Smolenskaya Oblast, Sychevskiy strain young bulls were fed grass briquettes containing concentrates for a period of 178 days, with the concentrates providing 32.4 percent of the nutritional value. In the process, the average daily weight increases amounted to 1,020 grams. When the animals were fed briquettes in which the concentrates provided 24.3 percent of the nutritional value, the daily weight increase was 988 grams and when the grass briquettes were combined with silage and concentrates (14 percent) -- 1,090 grams. The live weight at the end of the fattening regime was 456-476 kilograms and the production cost for the weight increase for the indicated rations fluctuated from 105 to 115 rubles.

Studies carried out at VIZh and other scientific institutes confirm the following: by employing differentiated feeding and taking advantage of the biological capabilitiy of young animals to compensate for temporary delays in growth, it is possible to regulate the intensity of development during the fattening process and

realize a considerable economy in the use of feed. During the period given to maturing young stock from 150 to 300-350 kilograms, they should be fed mainly coarse and succulent feed, thus realizing an economy in the use of concentrates. During the period of final fattening (last 80-120 days), it is recommended that use be made of rations having a higher energy value, thus improving the weight increases and the condition of the cattle.

For effective fattening, improvements in the utilization of feed and thrifty expenditures of grain, and in addition to raising the quality of the plant feed, it will be necessary to expand the industrial production of feed additives and premixes, taking into account the feed structure in individual zones throughout the country. In addition, the raw material base of the mixed feed industry must be expanded through the use of dry pulp residue, dry malt residue, grass meal and amide concentrate. A differentiated formula for mixed feed should be actively introduced into operations at the state and interfarm mixed feed enterprises, based upon the planned productivities for the animals and the feed rations for the different seasons of the year. It is obvious that the mixed feed enterprises must have special lines available for adding higher dosages of coarse feed and molasses to the mixed feed structures.

In recent years there has been a trend towards negating the role played by the pasturing of animals as a method for the maturing and fattening of large-horned cattle. The proportion of pasture feed in the rations of young stock, at kolkhozes and sovkhozes, has decreased from 24 percent in 1966 to 14.6 percent in 1980. It is obvious that greater attention must be given to raising the productivity of natural pastures, creating highly productive cultivated pastures and, on this basis, expanding the pasturing of cattle. This will make it possible to realize a great economy in the use of coarse, succulent and concentrated feed. Indeed, the kolkhozes and sovkhozes in the RSFSR have at their disposal roughly 60 million hectares of natural pastures and 25 million hectares of haying land. This large source of feed must be utilized in a more rational manner.

There is still something else. With converting animal husbandry over to an industrial basis, a considerable increase will take place in the role played by cattle maintenance systems and methods and in the extent to which they influence the productivity of the animals. At many enterprises of the industrial type, the young stock are being maintained throughout the year in closed facilities and on slotted floors. Under these conditions it will be necessary to monitor the microclimate very carefully and to display concern for reducing the number of injuries sustained by the animals (especially during the fattening of non-castrated young bulls). The implementation of a complex of measures for combating injuries must become a component part of production operations at today's modern animal husbandry enterprises.

Growth in the production of beef during the present five-year plan is greatly dependent upon achieving successful solutions for the principal problems discussed above.

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ROLE OF AGROINDUSTRIAL COMPLEX IN FOOD PROGRAM DISCUSSED

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/Article by A. A. Nikonov: "Formation of the Agroindustrial Complex of the USSR and Ways of Its Development"/

/Text/ Meeting the population's needs for food products according to scientifically substantiated norms occupies the first place among the most important tasks of economic and social development advanced by the 26th CPSU Congress. This is possible only on the basis of the establishment of a developed, dynamic and balanced agroindustrial complex in the country, which is the basis for the food program.

It is customary to call the totality of national economic sectors specializing in the production of agricultural products (food and nonfood products), in their processing into end products and in their delivery to consumers, as well as in the provision of means of production and in the production servicing of all these sectors, the agroindustrial complex.

In all, more than 60 national economic sectors participate in the formation of the end products of the agroindustrial sector at various stages of production and distribution. However, it is illegitimate to include, for example, metallurgy, coal, petroleum extracting, chemical and rubber industries in the agroindustrial complex, although metal, coal, petroleum, rubber and various chemicals are needed in the production of bread, meat, fibers and other products. The agroindustrial complex includes capital producing sectors, the bulk of the output of which is consumed in agriculture and in other spheres of the agroindustrial complex, including in food and light industries. This applies to tractor and agricultural machine building, mixed feed and microbiological industries, rural and reclamation construction and some others.

The totality of agriculture and of capital producing industrial sectors and sectors processing its products together with the production infrastructure represents the agroindustrial complex in the organizational and economic sense. Such a complex exists and functions. However, the economic aspect should be seen behind this.

The economic content of the agroindustrial complex is the transformation of separate and uncoordinated types of activities into unified, integrated production oriented toward end results with a balance and approximately the same technical level of its individual parts, as well as with the provision of developed technological, economic, organizational and other connections among them. Integrated production with an organic subordination of all individual parts to the ultimate goal becomes a production system, in which all the characteristic features of any system, that is, integrity, dynamic nature, proportionality of structure, stable relations, clearly defined functions of both individual parts and of the entire system, hierarchy and optimality, are inherent.

We do not yet have such an economically integrated and balanced agroindustrial complex as a system. It is only being formed and created. Today the task of science is to contribute to the most rapid solution of the entire range of problems connected with the formation of the agroindustrial complex as a single production system.

The proportion of the agroindustrial complex in the country's national economy is sufficiently big. Its sectors now produce 41.5 percent of the country's national income, employ 44.2 percent of the workers in the sphere of material production and concentrate 33 percent of all the productive capital. The share of the products of the agroindustrial complex in the retail commodity turnover of state and cooperative trade exceeds 70 percent.

Right now the work of the agroindustrial complex is noted for a relatively high efficiency. According to the data by V. A. Tikhonov /6/, 28 percent more net income per ruble of wages is produced there than, on the average, throughout the national economy. This is understandable, because, along with live and embodied labor, forces of nature, whose value we do not take into account (heat, light, water, soil nutrients and so forth) also operate in agriculture, which forms the nucleus of the agroindustrial complex.

The object of the functioning of the agroindustrial complex as a production system lies in meeting the population's needs for food and other consumer goods produced from agricultural raw materials. The entire activity of this system should be directed toward maximization of the output of the end product with minimization of losses and costs per unit of output. This requires every stage to be a continuation of the preceding stage and initial for the next stage. At the same time, strict proportions between stages, technological coordination and the principle of economic incentive should be observed.

In fact, however, today there is no such coordination in all the units. Feedback, that is, the influence of the consumer on the producer, is weak. As a rule, the producer dictates his terms to the consumer, although the consumer should have the right of choice. Agriculture is still forced to purchase and use the implements of labor and other means of production produced by industry, but often their quality is not high and they are not delivered in complete sets and in a sufficient quantity. The food industry processes everything that farms give and plants can permit themselves to be choosy only during peak periods. Trade and consumers take everything that light and food industries produce, in fact, being deprived of levers of effect on these stages of the agroindustrial complex.

The lack of coordination and insufficiently developed technological and economic relations have now become the basic cause of losses in the national economy and of the incomplete utilization of resources and their overexpenditure per unit of output. Sugar production is a characteristic example. In 1975-1979, as compared with 1965-1969, the output of sugar beets increased by 8 percent, the application of mineral fertilizers was doubled and the production of beet sugar was reduced by 15 percent. The import of this product was doubled. The overexpenditure of raw materials was the reason for this. Instead of the optimal expenditures of 6 to 6.5 tons of root crops per ton of sugar, 9 tons were expended during the Eighth Five-Year Plan and 10.4 tons, during the 10th Five-Year Plan. Therefore, about one-half of the gross output (43 percent) represented hidden losses, that is, 1.6 million hectares of arable land were occupied and 564 million man-hours of work time, 794,000 tons of the active substance of fertilizers and a great deal of fuel, metal and other materials were expended to no purpose. All this was due to the lack of coordination between the time of harvesting and of carting out, to the shortage of equipment and transport facilities, to the long-term storage of sugar beets in fields and receiving centers near stations, to the excessively prolonged periods of sugar extraction and to other similar reasons. This is the case not only with sugar, but with vegetables, fruits, potatoes and many other products as well. Owing to the lack of coordination of various units of the agroindustrial complex labor and products produced on kolkhozes and sovkhozes depreciate, although it should be stated that losses are also considerable at the agricultural enterprises themselves. All this points to the need for a flow system or continuity, sequence, synchronism and proportionality along the entire path from the field (sowing) to the warehouse of finished products after their production at the plant.

The agroindustrial complex is formed under the effect of objective factors. Production industrialization, division of labor, specialization, development of intersectorial relations and agroindustrial integration are the most important prerequisites. The last two processes are interconnected and interdependent. Scientific and technical progress leads to the development of specialization, division of labor and separation of production and the sector. Any division necessitates cooperation or integration. Therefore, this process can be called biunial.

Industrialization finds its expression primarily in a systematic decrease in the proportion of live labor and increase in embodied labor in the aggregate expenditures on output. For example, the expenditures of live labor during the 8th, 9th and 10th Five-Year Plans comprise 47, 40 and 36 percent respectively and of embodied labor, 53, 60 and 64 percent.

The share of structures, installations, equipment and means of transportation, that is, everything that is created in industrial sectors, grows steadily in the structure of the value of productive capital of agriculture. Whereas in 1966 it comprised 75 percent, in 1980, 86 percent. Only 14 percent of the productive capital now has an agricultural origin (productive and work livestock, perennial plantings and so forth). This attests both to industrialization and to intensifying intersectorial connections. Now more than 60 percent of all the intersectorial expenditures of kolkhozes and sovkhozes are spent on the payment for means of production and services of nonagricultural sectors.

During a historically short period a great deal was done to strengthen and modernize the material and technical base of agriculture (table 1).

Table 1. Growth of the Material and Technical Base of USSR Agriculture

Indicator	1965	1970	1975	1980
Power capacities, million hp	231.7	322.1	457.2	605
Consumption of electric power, billion kWh	21.1	38.6	73.8	109
Productive capital for agricultural purposes, billion rubles	50.4	74.9	135.2	203
Utilization of fertilizers, million ton of active substance	6.3	10.3	17.3	18.7

Owing to technical progress the machine-worker ratio increases considerably in agriculture and the level of labor approaches that attained in industry. However, the difference is still quite significant (table 2).

Table 2. Level of the Machine-Worker Ratio in USSR Agriculture (In Percent of the Level in Industry)

Indicator	1970	1975	1980
Power-worker ratio	45	53	66
Electric power worker-ratio	5	7	10
Capital-labor ratio	49	57	63

The deliveries of equipment and the power of machines increase from one five-year plan to another. In the quantitative indicators of the production of mineral fertilizers, tractors and combines the USSR occupies the first place in the world, outstripping the United States. The increase in the equipment of agriculture with machinery and the rise, although still on a small scale, in the deliveries of fertilizers and pesticides make it possible to gradually master industrial technologies of the production of plant and animal products. For example, in 1980 corn for grain was cultivated according to industrial technology on 30 percent of the total area, sunflowers, on 14 percent, sugar beets, on 1.8 percent and potatoes, on 0.5 percent. This technology was mastered in tomato production on sizable areas (4.8 percent). Experience indicates that in this case live labor, as well as the aggregate costs per unit of output, is saved and losses are reduced considerably.

The share of agricultural output received in food and light industries for processing increases considerably and the consumption of output without preliminary processing decreases, although its absolute quantity does not change significantly. At present about 53 percent of the total agricultural output is processed, less than 23 percent is consumed in unprocessed form and about 19 percent is utilized within the sector.

Whole sectors and types of services are separated from agriculture. It concentrates more and more on the production of raw plant and animal products, becoming the raw material base of light and food industries.

Division of labor and specialization occur both in agriculture and in other sectors of the national economy, including industry. New ministries and departments providing agriculture with means of production, that is, of tractor and agricultural machine building, of machine building for animal husbandry and feed production, of production of mineral fertilizers and of mixed feed, as well as microbiological, industry, have appeared recently. Industry gradually takes over a number of functions from agriculture and on this basis new sectors are created.

Material and technical servicing (State Committee for Supply of Production Equipment for Agriculture), repair, land reclamation and construction of waterworks and rural construction also separated from agriculture itself and formed independent departments. Chemicalization is in the process of separation. At present there are 14 administrations (Administration of Poultry Raising Industry, Administration of Beef Production and State Purchases of Livestock, Administration of Hog Raising, Administration of Production and Marketing of Fruits, Berries and Grapes and so forth). All this attests to the continuing differentiation and division of labor.

At the same time, we are still far from a situation when agriculture, becoming a "pure" sector, will produce only plant and animal products. Moreover, the proportion and absolute quantity of nonagricultrual output (building materials, transport operations, initial processing and so forth) on kolkhozes and sovkhozes are increasing. In the 1970's its share rose from 20 to 25 percent. This process can be called "despecialization." It is due not only to the attempt to level out the seasonal load and to better utilize resources. There is another, no less important, reason. It lies in the lack of order in relations between agriculture and sectors called upon to provide it with means of production and services. Therefore, kolkhozes and sovkhozes are forced to have their own construction organizations, transport and industrial production.

The attitude toward this tendency cannot be unambiguous. Where nonagricultural sectors make it possible to more fully and better utilize labor and other resources, they should be supported in every possible way. However, where they are governed by unregulated relations and the lack of development of other spheres of the agroindustrial complex, it is necessary to change the existing situation. At the same time, with the presently existing lack of balance of the spheres of the agroindustrial complex and the poorly developed infrastructure it would be premature and erroneous to curtail nonagricultural sectors, although resources and, especially, capital investments are dissipated here. All this indicates that division of labor has not yet been fully developed and it will continue steadily.

As industrialization and specialization of production increase, the exchange both within the sector among individual enterprises and between whole sectors, primarily between agriculture and industry, expands. This process is accompanied by an increase in the freight turnover, development of transport and the road network and establishment of refrigerating and storage facilities fitted with the appropriate equipment.

Thus, there is an integration of agriculture with industry, transport and the production infrastructure, including sectors dealing with the distribution and sale of products. These objectively determined processes, that is, industrialization, specialization and integration in themselves do not yet create a completed agroindustrial complex and are only its prerequisites, as well as the reflection of the formation of a complex production system.

For the time being the tendencies toward integration are less pronounced that toward differentiation. This is evident from the fact that every sector that breaks away tries to stand apart, to create its own material and technical base, to ensure higher accumulations and to increase profitability at its "own" stage without a connection with final results, that is, departmental interests, not the interests of the entire complex, are pursued. In practice, this leads to an increase in profits not in proportion to services and to the delivered means of production. The cost of a useful unit of equipment, fertilizers and mixed feed, of one place for livestock, of land reclamation, of construction and so forth increases. However, the profitability of kolkhozes and sovkhozes decreases, the number of unprofitable farms increases and the debts of agricultural enterprises rise. All this points to the imperfection of the economic mechanism of management and to the nonequivalence of the intersectorial balance.

The sectorial and functional structure of the agroindustrial complex consists of several spheres corresponding to the sequence of product movement. Usually, it is customary to single out three spheres.

The first is the production, delivery and repair of means of production for agriculture and food and light industries. It includes tractor and agricultural machine building for animal husbandry and feed production, as well as light and food industries, the repair of equipment, the production of mineral fertilizers and chemical plant and animal protection agents, mixed feed and microbiological industries and land reclamation, road and rural construction.

The second sphere includes kolkhozes, sovkhozes and interfarm enterprises producing plant and animal products. This is the basic unit of the agroindustrial complex, where new output is synthesized with the utilization of the forces of nature and industrial means of production. Subsequently, these products are only transformed and put into circulation.

The third sphere includes sectors producing consumer goods from agricultural raw materials, that is, food, meat, dairy and light industries, which procure raw products from kolkhozes and sovkhozes and have specialized facilities for their transportation.

Distribution (trade and marketing), transport, communication and, finally, the social infrastructure (personnel training, science and, directly, the infrastructure) should be included in a separate sphere. Sometimes personnel training is included in the first sphere. Theoretically, this is permissible, because productive forces for the agroindustrial complex are involved. In practice, however, it would be convenient to include everything that is connected with man, including the infrastructure, in a separate sphere.

The structure of the agroindustrial complex can be expressed primarily in the end product, composition of fixed capital and size of manpower. An analysis of the available data indicates that the share of the first sphere, as well as of distribution, increases most rapidly in the end product, that is, industrialization of production and intersectorial exchange intensify. In the last decade the share of the food industry has declined slightly, which points to a considerable lag of this sector.

Fixed productive capital increases in all the spheres of the agroindustrial complex, but more rapidly in agriculture and in distribution sectors. The food industry and transport lag seriously. With regard to agriculture the passive part of the capital (buildings and production premises) increased there with particular speed, while the active part, especially equipment, grew slowly and its proportion was low. However, if the incompleteness and inefficient structure of the latter are taken into consideration, it will become clear that the growth of capital has not produced the desired increase in labor productivity.

The total number of workers in all the spheres of the agroindustrial complex remains almost unchanged--a little more than 43 million people. However, it steadily decreases in agriculture and increases in capital producing sectors and other spheres of the agroindustrial complex. Obviously, this tendency will persist. Distribution, service and capital producing spheres will expand. Therefore, labor productivity growth in agriculture, along with the retention of skilled personnel, especially young people, in it becomes the most acute problem.

Since the agroindustrial complex is an intricate production system with all the features characteristic of it, it should be built with the utilization of the system approach and system analysis methods and with due regard for the important properties of systems. This task results from the decisions of the 26th CPSU Congress: "... To ensure a unified planning and a proportional and balanced development of the sectors of the agroindustrial complex, considerable strengthening of its material and technical base, improvement in economic relations among sectors and organization of their efficient interaction for an increase in the production of agricultural products and improvement in their preservation, transportation, processing and delivery to the consumer" /1/.

The further development and formation of the agroindustrial complex should proceed in the indicated directions. Only then will it become an integral production system and receive its final formulation. Integral nature requires a simultaneous development of all spheres, primarily pulling up lagging units. In particular, this applies to equipment. Fundamentally new machine systems, which make it possible to ensure the transition to industrial technologies, are more powerful, save more energy, are high-quality and comfortable, copy the microrelief, are equipped with electronics, combine several operations and so forth, are needed now.

The proportionality and balance of the agroindustrial complex envisage primarily the elimination of bottlenecks and disproportions both at intersectorial and sectorial levels. First of all, it is necessary to pay attention to the construction of storage facilities and to the expansion of refrigerating facilities, the provision with which now comprises no more than 38 to 48 percent, to overcoming the lag of the food industry, to deliveries of equipment, 29 to 68 percent of the orders for which are met, to road construction, including the intrafarm network, to infrastructure projects, especially preschool projects, and to medical institutions in rural areas. It is also necessary to increase the supply of fertilizers, toxic chemicals, mixed feed and premixes. Owing to the shortage of the latter, large amounts of fodder grain are not used productively.

An intrasectorial balance boils down to the establishment of correct proportions and substantiated structures of individual sectorial components. The correlation between the stock of animals and feed supply and between power machines and working elements, the content of nutrients in feed, as well as in fertilizers for different soils and crops, and the provision of farms with machine operating personnel are especially important.

Technological, economic, organizational and legal relations, primarily at the intersectorial level, are of no lesser importance. In practice, their regulation boils down to the development of an efficient mechanism of management and control. As yet this mechanism does not operate for the benefit of agriculture and the agroindustrial complex as a whole, to which the data of table 3 attest.

Table 3. Some Economic Indicators of the Development of Agriculture in the USSR (Percent of 1966-1970)

Indicator	1971-1975	1966-1980
Gross output in comparable prices of 1973	113	123
The same in the public sector	117	132
Production costs in current prices	147	195
The same in comparable prices	122	144
Expenses on a unit of output in current prices	126	149

Therefore, there is a need for a systematic implementation of the cost-accounting principle both within the sector and at the intersectorial level, regulation of purchase prices of agricultural products, their coordination with prices of the means of production supplied by industry and of the services rendered, realization of a closer connection of the forms of incentives with the final result, intensification of the influence of the consumer on the producer (or supplier) of products or services and increase in the role of contracts with a mutual responsibility of the parties.

For the establishment of a sound agroindustrial complex the methods, principles and structure of management of the entire system should be improved. Management is effective when economic, organizational, social and psychological methods in their unity are applied. Overcoming departmentalism, changing over to the intersectorial principle and flexibly combining sectorial and territorial principles are also important. Both the mechanism of management and control should be directed toward final results. In this respect of great interest are the production experiments in Estonia and Georgia, which should be expanded and transferred to oblast and republic levels.

Regulation of the management of agricultural production and of planning should ensure more defined functions for each individual component of the system so that the maximum final effect can be attained. This means that every part of the system must "work" with a full yield for the maximization of the final result and departmentalism and departmental interests, when they are at variance with the general interests of the agroindustrial complex, should be overcome. This is especially important now during the development and realization of the food program.

Like any production system the agroindustrial complex should develop dynamically, because the demands of society on this complex increase constantly, while resources and conditions of production and distribution change. The necessary reaction to changes should be manifested both in all units and in the complex as a whole. Routine, bureaucratism and lag are intolerable here. A delay in the development of any unit "torpedoes" the growth of the entire system, creates disproportions and lowers the efficiency of the latter. The law of the minimum, when development is limited by the lagging component, is manifested here.

The agroindustrial complex as a production system is hierarchic. All its spheres with all their constituent sectors exist only at the country's level. By no means all capital producing sectors are represented at the level of a Union republic. For example, tractor building, combine building, production of mineral fertilizers and so forth do not exist in every republic. The first sphere narrows down even more in oblasts, krays and autonomous republics. It is poorly represented in rayons, where, as a rule, there are no scientific institutions, personnel are not trained and there are not even processing enterprises everywhere.

The functioning of the agroindustrial complex should provide for an economical expenditure of all production resources. This task was advanced by the 26th party congress as the most important task for the 1980's. The objective situation is such that the growth of the volumes of production requires more resources, but they are limited and some will even be reduced. The reserves of mineral raw materials, fuel and metal are unlimited and the influx of manpower will decrease. Therefore, the entire system of the agroindustrial complex, like the national economy as a whole, should change over to resource saving technologies and resource saving equipment. Every unit of output should be obtained with smaller expenditures of labor, fuel, supplies, raw materials and feed.

Conditions and requirements, as well as concrete methods of saving, are specific for every type of resource. However, there are certain general principles acceptable for most of them. They are integrity, proportionality, standardization, purposefulness and efficiency of management.

The formation of a balanced and dynamically developing agroindustrial complex places heavy demands on all the sectors of agrarian science. Biologists and agronomists face the task of developing varieties and hybrids of cultivated plants yielding a good return on water, light and nutrients and resistant to unfavorable environmental conditions, especially drought, pests and diseases. Substantiation of the ways of a more efficient utilization of the bioclimatic potential and developments of industrial technologies are also needed.

Zooengineering science will have to engage more intensively in an improvement in the utilization of the biological potentials of animals, refinement of breeds of domestic livestock and development of feed saving technologies and engineering science, in the development of energy saving machines and technologies and in a persistent search for new sources of energy.

Agroeconomic science faces especially complex and diverse tasks. There is a need for developments of an effective mechanism of management and control, substantiation of intersectorial relations and proportions, improvement in planning and forecasting, establishment of overall object programs, development of regional systems of management of agriculture encompassing resources, technologies, organization and management in their unity and substantiation of the ways of social development of rural areas and of relations in the "society-collective-man" system. At the same time, any developments should take into consideration the possible ecological and social consequences of their application.

Thus, the formation of a dynamic and balanced agroindustrial complex and realization of the food program dictate the need for a significant improvement in the organization and methodology of scientific work in the agrarian sector.

BIBLIOGRAPHY

1. "Basic Directions in the Economic and Social Development of the USSR for 1981-1985 and for the Period Until 1990," "Materialy XXVI S"yezda KPSS" /Data of the 26th CPSU Congress/, Moscow, Politizdat, 1981.

2. Brezhnev, L. I., "Report of the CPSU Central Committee to the 26th Congress of the Communist Party of the Soviet Union and the Immediate Tasks of the Party in the Area of Domestic and Foreign Policy," Ibid.

3. Lezina, M. L., "The Agroindustrial Complex and Its Functional Structure," VESTN. S.-Kh. NAUKI, 1981, No 5.

4. "Narodnoye Khozyaystvo SSSR v 1980" /USSR National Economy in 1980/, Statistical Yearbook, Moscow, Finansy i Statistika, 1981.

5. "Narodnokhozyaystvennyy Agrarno-Promyshlennyy Kompleks. (Kollektiv Avtorov)" /The National Economic Agroindustrial Complex. (Group of Authors)/, Moscow, Ekonomika, 1980.

6. Tikhonov, V. A., "Essence of the Agroindustrial Complex," VOPR. EKONOMIKI, 1980, No 8.

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BELORUSSIAN MINISTER DISCUSSES FRUIT, VEGETABLE SUPPLY

Minsk PROMYSHLENNOST' BELORUSSII in Russian No 8, Aug 81 pp 45-48

[Interview with N.S. Yakushev, Minister of the Fruit and Vegetable Industry for the BSSR; date and place not specified]

> [Text] Our correspondent K. Kanus held a conversation with N.S. Yakushev, Minister of the Fruit and Vegetable Industry for the BSSR, concerning certain problems associated with the development of this new branch of industry for the republic.

[Question] Nikolay Stefanovich, in the basic directions for the economic and social development of the country, mention is made of the need for complex processing and improvements in the use of agricultural raw materials and in the technology employed for the preserving of fruits and vegetables. What contribution is the new ministry making towards solving these problems?

[Answer] The production level and variety and quality already achieved for fruit and vegetable products, notwithstanding the available potential, are not in keeping with the increasing requirements of the population. Owing to a lack of departmental coordination among the enterprises and organizations engaged in supplying the population with vegetables and fruit, great losses are occurring in these products. A modern industrial processing technology is being introduced into operations only slowly and the development of the logistical base for organizations responsible for storing the raw materials is lagging behind.

The Ministry of the Fruit and Vegetable Industry for the BSSR, a component part of the republic's agroindustrial complex, must within a short period of time implement considerable improvements in the work of supplying the population with vegetables, berries, potatoes and the products obtained from their processing. The task has been assigned for increasing the production volumes, eliminating losses and organizing efficient and coordinated operations among all enterprises and organizations engaged in the raising, procurement, storage, transporting and sale of these products.

The new ministry has also been assigned such tasks as: implementing a uniform technical policy with regard to the production, procurement, processing, storage and sale of fruit and vegetable products; exercising control over the carrying out

of plans for the formation of the republic fund and import receipts for these products; processing the products of field crop husbandry at subordinate canning and other industrial enterprises; storing the vegetables procured.

[Question] What are the most typical features of the organizational period?

[Answer] Six specialized vegetable trusts of the Ministry of Agriculture for the BSSR have been made subordinate to our ministry. These trusts comprise 115 sovkhozes, including in Brestskaya Oblast -- 21, Vitebskaya Oblast -- 17, Gomel'skaya Oblast -- 19, Grodnenskaya Oblast -- 14, Minskaya Oblast -- 30 and in Mogilevskaya Oblast -- 15 sovkhozes. In addition, 16 fruit and berry goskhozes of the republic's horticultural trust have been placed under our jurisdiction.

Forty five canning, eight vegetable drying and ten wine-making plants have been transferred over to us from the Ministry of the Food Industry for the BSSR.

A number of facilities have been turned over to the republic's Minplodoovoshchkhoz [Ministry of the Fruit and Vegetable Industry] by the Ministry of Trade for the BSSR: gorplodovoshchtorgs [municipal trade organizations for trading in fruit and vegetable products], trade-procurement bases for the storage, processing and sale of fruit and vegetable products and a special design-technological bureau with experimental production.

Considerable work still remains to be carried out in connection with organizing subordinate structural subunits, selecting personnel, organizing the procurement, processing and sale of products and constructing storehouses and hothouse combines. For example, let us take the problem of potato and fruit and vegetable storage at sovkhozes, processing enterprises and at procurement organizations. We presently have at our disposal 235 vegetable and potato storehouses representing an overall capacity for one-time storage of 346,800 tons and 50 refrigerated fruit storehouses with a capacity of 30,700 tons. These capacities are clearly inadequate and especially at sovkhozes and processing enterprises. Thus the current five-year plan calls for the construction of additional refrigerated storehouses for approximately 300,000 tons of one-time storage.

[Question] Above, among the tasks confronting the ministry, you cited the absence of a uniform technical policy in the field of processing. What has already been accomplished and what is now being done in this regard?

[Answer] The plans call for the technical re-equipping of the entire processing industry so as to bring about a considerable increase in the production of products that are ready for use, semifinished goods, products made from potatoes, freshly frozen fruits and vegetables and products for children's and dietetic nourishment. Following implementation of the measures planned, we expect the production of canned goods during the current five-year plan to increase by 11.2 percent, dried vegetables and potatoes -- by 45.4 percent and products made from potatoes -- by a factor of 2.2.

A principal problem continues to be that of raising labor productivity. Such growth must be achieved both through the technical re-equipping of production and

through the mechanization of manual operations and the introduction into operations of a progressive technology.

A paramount task of the vegetable drying branch is that of increasing the production volume for dry potato puree through the modernization of potato grit lines at the Liozno and Chausy plants, through the introduction of works by the Scientific Production Association for the Production of Food Products From Potatoes of the USSR Ministry of the Fruit and Vegetable Industry and through the construction of new plants.

Requirements exist at the canning plants for introducing continuously-operating presses, the bottling of juices using the hot method, the organization of aseptic storage for fruit and berry semi-finished products and the creation of flow lines for the production of finished products. The capabilities for producing canned goods will increase by 35 million conventional cans, including 25 million conventional cans for children's feeding. The problems concerned with the mechanization of loading-unloading and storehouse operations must be solved completely.

[Question] Nikolay Stefanovich, a course is being followed in industry directed towards the creation of production associations. Is such a task being assigned to the Ministry of the Fruit and Vegetable Industry for the BSSR?

[Answer] Of course. The so-called "complex effect" cannot help but influence the results of the economic activities of enterprises and organizations subordinate to our ministry. In particular, the oblast trusts of vegetable sovkhozes of the Ministry of Agriculture for the BSSR have already been abolished and also the oblast production associations of the canning and wine-making industry of the Ministry of the Food Industry for the BSSR. The Brestskaya, Vitebskaya, Gomel'skaya, Grodnenskaya, Minskaya and Mogilevskaya oblasts cost accounting associations for fruit and vegetable products have been created in their stead. The Volma cost accounting association for fruit and vegetable products has been organized for supplying the population of Minsk with vegetables and potatoes.

The chief task of the association consists of concentrating efforts on satisfying the requirements of the republic's population for fruit and vegetable products and potatoes, in fresh and processed forms. Today they are developing plans for intensifying production and supplying the trade organizations of our ministry and Mintorg [Ministry of Trade] for the BSSR and also the departments of workers' supply with potatoes, vegetables and berries. They will also distribute fruit and vegetables products, grapes, melon, citrus and other crops imported into the republic from other regions of the country. At the same time, the associations will process berries, vegetables and potatoes, produce quick-frozen canned fruit and vegetable products and carry out souring and fermentation work. They are also assigned responsibility for the storage of all products and potatoes that are procured and processed and also for organizing the wholesale and retail trade. With regard to the procurements of technical varieties of potatoes for alcohol and starch-syrup enterprises, these functions are retained by the Ministry of the Food Industry for the BSSR. Just as in the past, Belkoopsoyuz [Cooperative Union of the Belorussian SSR] will procure fruit and vegetable products and potatoes from the

population and from farms and enterprises that are not located within the procurement zone for our ministry.

[Question] Is it not true that your ministry will also procure a certain portion of its raw materials from the population?

[Answer] Yes. This would be fruit and vegetable and wild-growing raw materials. Towards this end, approximately 1,000 receiving-procurement points will be in operation each year, with approximately 200 of this number being permanent points and 800 temporary (depending upon the harvest conditions).

Here I would like to mention one particular factor. In view of the fact that the canning and vegetable drying branch of industry is still operating at a loss, some thought should be given to regulating the prices for the fruit and vegetable products.

[Question] In the basic directions for the economic and social development, mention is made of the need for expanding in every possible way the conversion of the processing industry over to accepting the fruit and vegetables in the production areas and carting them out using the transport vehicles of the procurement organizations. How is this problem being resolved?

[Answer] During the current five-year plan, we hope to complete the construction mainly of receiving-delivery points at sovkhozes. On the other hand, in order to avoid stoppages in the carting out of the fruit and vegetable products, the Ministry of the Fruit and Vegetable Industry for the BSSR must have its own powerful specialized motor transport enterprises. This is a very complicated problem. The timely delivery of fruit and vegetable products to the processing enterprises, to the procurement bases and to the trade network, with minimal losses during shipments, is dependent upon a solution being found for this problem.

It should be noted that at the present time the ministry has a considerable number of motor vehicles. However, the level of their concentration is extremely low. In particular, mention should be made of the many diverse types of vehicles in the motor vehicle pool. Moreover, approximately 30 percent of the motor vehicles have been in operation for more than 10 years and for all practical purposes no specialized motor transport services are available. The production-repair base is very weak at a majority of the enterprises and this greatly affects the level of technical readiness of the rolling stock.

The plans for the immediate future call for the creation of cost accounting specialized motor vehicle enterprises and for the transporting of fruit and vegetable products in containers, on pallets, in special packaging and so forth.

Subsequently, as the motor vehicle enterprises are built and specialized motor transport services are concentrated in them and also as procurement points are built on the farms, a gradual conversion will be carried out over to accepting vegetables directly in the areas where they are produced. In the process, the function of accepting the products will be carried out by the driver-forwarding agents of the specialized motor vehicle enterprises.

The following problem awaits a solution. In the republic there are very few storehouses having a controlled sto age regime and there are no warehouse capacities for the storing and processing of deep-frozen products. During the current five-year plan, a portion of the capital investments must be used for the construction of low temperature refrigerators.

[Question] What production volumes have been assigned to the ministry? What assortment of products will it produce?

[Answer] The plans call for vegetable procurements to be increased to 450,000 tons by 1985, compared to only 304,000 tons during the Tenth Five-Year Plan. By means of increased production specialization and concentration, the plans call for a considerable expansion in the assortment of fruit and vegetable products, especially cucumbers and tomatoes.

The plans call for a number of measures to be carried out aimed at the creation of vegetable zones and bases for the storage, processing and sale of fruit and vegetable products, around oblast cities and industrial centers, by means of increased production specialization and concentration, the construction of hothouse combines and so forth. We hope to receive considerable assistance from industrial enterprises and organizations in carrying out this work.

The timely implementation of these and other measures will make it possible to improve considerably the work of supplying the population with vegetables, potatoes and the products obtained from their processing. For example, the per capita consumption of potatoes in 1985 will be 92 kilograms, compared to only 80 kilograms in 1980.

[Question] What will the trade network in vegetables be like in the immediate future? This raises the question of specialized packaging.

[Answer] At the present time, there are gorplodoovoshchtorgs [municipal trade organizations for trade in fruit and vegetable products] in each oblast center and in Bobruysk, whereas in Minsk -- six wholesale-retail fruit and vegetable combines. In other large cities and industrial centers throughout the republic, fruit and vegetable trades or trade-procurement bases will be created this year. There are 323 vegetable stores subordinate to our ministry. Is this figure small or large? We do not believe that this number of stores is adequate for completely solving the tasks confronting us, in connection with the forthcoming increase in the production and procurements of all types of fruit and vegetable products. Taking into account the existing situation, a plan is being prepared for the further development of the fruit and vegetable trade network and storage installations for fruit and vegetable products, in cities throughout the republic, for the Eleventh Five-Year Plan and for the period up to 1990.

The plans call for further development of direct deliveries of fruit and vegetable products from the "field to the store," especially during the season of mass procurements. In the interest of ensuring the best services and the most complete satisfaction of the population's requirements, the sale of fruit and vegetable products in fresh and processed form will be carried out through a supplementary

light retail trade network (pavilions, kiosks, hawker's trays), food stores of the Ministry of Trade for the BSSR and public catering vegetable bases and enterprises.

Concerning specialized packaging. Unfortunately, we still do not have an adequate amount of it for early greens, berries and other products. The appropriate services of our system are attempting to solve this problem. The requirements of the trading organizations for containers are not being satisfied.

[Question] Could you not supply us with some information on the planting stock and seed? Indeed, so much depends upon their availability and quality.

[Answer] At the present time, six fruit tree nursery farms are raising the planting stock for the fruit and berry crops. In the autumn of this year, they will make available 38,000 young fruit tree plants, 80,000 berry bushes and 700,000 strawberry seedlings. A portion of the planting stock will be sold to the population (10,000 young fruit tree plants, 15,000 European black currant plants and 100,000-150,000 strawberry seedlings). The remaining planting stock for fruit and vegetable crops will be used for establishing industrial orchards and small fruit patches on farms of the republic's horticultural trust. Subsequently, commencing in 1983-1984, the planting stock for fruit and berry crops will be grown in volumes which will satisfy the complete requirements of the kolkhozes, sovkhozes, horticultural associations and population, in accordance with established contracts. Maternal plantings for fruit and berry crops are presently being established on the fruit crop nursery farms.

The establishment of orchards will be carried out on the basis of plans developed earlier and taking into account the latest technological achievements in the production, commodity treatment, storage and processing of fruit and berries.

[Question] You mentioned industrial orchards. Could you describe them?

[Answer] The average area of such an orchard -- 400-800 hectares. Fifty percent of this area is occupied by narrow-row, packed plantings having flat crowns and lacking trellises, The density of the plantings is 500 trees per hectare and for orchards having low-growing cloned seedlings -- 800-1,000 trees per hectare. Ninety percent of such plantings is occupied by apple and plum trees and 10 percent by strawberries and European black currants.

In short, everything that we have done, are doing or plan to do is making it possible to state with confidence: considerable improvements will be realized in the work of supplying the populations of cities and industrial centers throughout the republic with food products, especially fruit and vegetable products and the dining tables of citizens will become more rich in content.

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AGRO-ECONOMICS AND ORGANIZATION

AGRICULTURAL LABOR, LAND, MATERIAL-TECHNICAL RESOURCES DISCUSSED

Moscow EKONOMIKA SEL'SKOGO KHOZYAYSTVA in Russian No 11, Nov 81 pp 3-6

/Article by Aleksandr Ivanovich Zdorovtsev, professor, rector of the Uman' Agricultural Institute: "Resources of Agriculture"/

/Text/ The resources of agriculture are subdivided into labor, land and material-technical resources.

Labor resources. As is well known, their number in USSR agriculture is decreasing. On kolkhozes and sovkhozes and at interfarm, subsidiary and other production enterprises in 1950 the average annual number of employed individuals was 30.9 million and in 1979, 26.2 million, or almost 15 percent less.[1] However, the dynamics of the labor resources of agriculture should be characterized not only by their absolute number. As a result of the development of almost 42 million hectares of virgin and long-fallow land, sown areas expanded in the country and, at the same time, the size of the population increased considerably. Therefore, in terms of the comparable sown area and number of residents the reduction in the number of workers in agriculture is more perceptible. The number of workers directly employed in the sector was reduced by 42 to 43 percent throughout the USSR in 1950-1979. However, in some of the country's regions the dynamics of labor resources is characterized by an opposite tendency. Whereas their number is decreasing in the European part, it is increasing in Central Asia and the Transcaucasus. For example, a quarter of a century ago 183,000 people worked on Kazakhstan's sovkhozes and in 1979, more than 1 million.

The drawing of ever newer land areas into the agricultural turnover was accompanied by an increase in the number of workers. From 1960 through 1979 the areas sown with agricultural crops in all categories of farms in Kazakhstan expanded from 28,432,000 to 35,952,000 hectares and in the Kirghiz, Tajik, Turkmen and Uzbek republics, from 5,515,000 to 6,902,000 hectares. During that period the average annual number of kolkhoz members and sovkhoz workers employed in all the sectors of agriculture of these republics increased 30 to 42 percent respectively. Therefore, the reduction in labor resources in USSR agriculture occurs with their simultaneous redistribution among the country's individual regions. Even in some oblasts of the Ukrainian SSR--a republic of a traditional outflow of manpower--labor resources

1. Data from the collections "Narodnoye Khozyaystvo SSSR" /USSR National Economy/ for the corresponding years are presented here and hereinafter.

are increasing. Fundamental changes in the intensification and sectorial structure of agriculture are raising the demand for manpower, the need for which is being met not only by local sources, but also as a result of an organized resettlement of residents from other regions. On the whole, such shifts characterize a more uniform territorial distribution of the main productive force, reflecting the indisputable advantages of the socialist planned system.

The general decrease in manpower employed in the country's agriculture is accompanied by its qualitative improvement. This process is manifested in the increase in the number of tractor and combine operators, drivers, agronomists, zootechnicians, engineers and other categories of specialists and in the rise in their educational level. On the average, throughout the country the number of machine operators per 1,000 average annual workers in agriculture increased from 94 in 1960 to 173 in 1979. The size of the most skilled manpower in the structure of the labor resources of agriculture in individual republics is by no means the same. In 1979 in the Georgian SSR it was 63 and in the Kazakh SSR, 224 people per 1,000 average annual workers. Such significant deviations are due to the different density of labor resources per unit of land area, the sectorial structure of agriculture, the level of its intensity and some other characteristics. However, the stable tendency toward a steady increase in the proportion of machine operating personnel in kolkhoz and sovkhoz production is common for all the republics.

The tendency toward a further decrease in the number of people working directly in agriculture will persist during the period until the year 2000. However, according to the calculations of specialists, the sector's needs for workers can be met --9 to 10 million people--with a simultaneous development of sectors servicing agricultural production. Therefore, the decrease in labor resources should not be considered their irrevocable loss for agriculture. Undoubtedly, the forecast period will be characterized by a further industrialization of agricultural production and, therefore, by an inevitable intensification of its interconnection both with traditional and new sectors of the agroindustrial complex. In connection with this there will be a greater need for workers for the enterprises that provide agriculture with means of production, build production and cultural-general projects for it, procure, transport, store and process agricultural raw materials and so forth.

The role of science in the development of agriculture is increasing immeasurably and the sphere of cultural and general services provided for the population will expand considerably, which, in turn, will also require an additional number of workers. Whereas in the last few years the country's agriculture has enjoyed the products and services of approximately 90 to 100 national economic sectors and, furthermore, about 60 sectors have been operating with raw materials or semifinished products from agricultural raw materials, in the future the number of the sectors of the agroindustrial complex will increase and their scale will expand (I. V. Kurtsev, "Ekonomicheskoye i Nauchno-Tekhnicheskoye Prognozirovaniye Razvitiya Sel'skogo Khozyaystva v SSSR" /Economic and Scientific-Technical Forecasting of the Development of Agriculture in the USSR/, Moscow, 1974, p 12).

Therefore, the assumed twofold or threefold decrease in the number of workers directly employed in agriculture is connected with their redistribution among the sectors of a unified dynamically developing agroindustrial complex. Consequently, the numerical magnitude of the labor resources of agriculture should not be evaluated without comparing it with the number of those employed in other spheres of the agroindustrial complex.

In prerevolutionary Russia, in practice, nonagricultural sectors of the agroindustrial complex did not exist, more than 99 percent of the power resources of agriculture were represented by draft animals and the production of tractors, motor vehicles, fuels, oils and mineral fertilizers, as well as many other material and technical facilities produced by modern industry, was completely or almost completely absent. Owing to this, labor productivity in agriculture remained low and 75 percent of the total able-bodied population was employed in the sector. During the years of Soviet rule the situation changed fundamentally. The number of workers directly employed in agriculture was reduced 1.8-fold, comprising only 21 percent of the total able-bodied population. At present approximately 8 million people work in the sectors of the agroindustrial complex supplying means of production to agriculture and ensuring the processing, transportation, storage and sale of agricultural products (I. V. Kurtsev, "Ekonomicheskoye i Nauchno-Tekhnicheskoye Prognozirovaniye Razvitiya Sel'skogo Khozyaystva v SSSR," Moscow, 1974, p 12). Although in terms of the number of workers the modern structure of the agroindustrial complex is not yet optimal--66 percent of their total number are employed in the production of products in agriculture, 11 percent, in the production of means of production for rural areas and 23 percent, in the procurement, transportation, storage and sale of finished products ("Nauka--Sel'skomu Khozyaystvu" /Science for Agriculture/, Moscow, Nauka, 1979, pp 47 and 100), agricultural production firmly develops along the path of industrialization and its transfer to an industrial basis, which ultimately leads to a decisive role of the intensive growth factor in it. From 1913 through 1979 gross agricultural output increased 3.5-fold and the annual labor productivity of this sector's workers, more than sixfold.

Land resources. As of 1 November 1979 the USSR territory totaled 2,227.5 million hectares, of which 1,050.3 million hectares, or less than one-half, were used by agricultural enterprises. Agricultural land occupies 552.8 million hectares, arable land comprising only 41 percent of them. Its proportion in the country's total territory slightly exceeds 10 percent and is approximately at the level of the average indicators of countries throughout the world. However, in the USSR only about 60 percent of this type of land is located under favorable soil and climatic conditions.

The size of arable land in the country is expanding with its simultaneous redistribution throughout the Union republics. Kazakhstan, Uzbekistan and Turkmenistan continue to remain the basic sources of additional areas. In the Ukrainian SSR, the Moldavian SSR and a number of other republics, owing to the high degree of plowing of agricultural land, there is a reduction in arable land because of its forced allocation for the construction of industrial and agricultural projects. It is important that throughout the country additionally introduced areas exceed withdrawn areas.

For a fuller evaluation of the availability of land resources the indicator of their per-capita availability is used. A stable tendency toward a reduction in the area of arable land per resident in the country has been observed in the last 20 years. In 1958 this indicator was 1.06 hectares and in 1960 it was lowered to 1.04 hectares, in 1970, to 0.92 hectares and in 1979, to 0.86 hectares. These data indicate that, on the average, the per-capita area of arable land is annually reduced by approximately 0.01 hectares.

The decline in the indicator of land supply can be compensated only by the intensification of all the sectors of agriculture in every rayon, oblast and republic. That is why "Basic Directions in the Economic and Social Development of the USSR for 1981-198[illegible] and for the Period Until 1990" envisage a continuation of the course of the maximum possible intensification of agricultural production.

Intensification of agriculture on the basis of its maximum possible mechanization, electrification, chemicalization and reclamation makes it possible to obtain more and more agricultural products from a decreasing per-capita land area. From 1958 through 1979 the indicator of the size of arable land per resident in the country was lowered by 0.20 hectares. However, owing to intensification, gross output on kolkhozes and sovkhozes and at other enterprises increased, as a result of which during that period the per-capita consumption of meat rose 1.6-fold, of milk and dairy products, 1.4-fold, of eggs, more than twofold, of fish and fish products, 1.7-fold, of sugar, 1.8-fold, of vegetable oil, 1.7-fold and of vegetables and melon crops, 1.3-fold.

Despite such a significant increase, the level of nutrition recommended by science has not yet been attained in our country. According to the conclusion of scientists, this historically important problem can be solved during the period of 1985-1990. This economic forecast is based on the fact that during the foreseeable future agriculture will develop under conditions of a relatively stable total area of arable land. According to the data by academician A. V. Sidorenko, by the year 2000 about 35 million hectares of agricultural and forest land will be needed for the placement of new industrial enterprises, roads and settlements, while the reserves of areas for agricultural use total approximately 38 million hectares ("Nauka--Sel'skomu Khozyaystvu," Moscow, Nauka, 1979, p 114). Therefore, land additionally introduced into agricultural turnover, basically, can only make up for its sizes alienated on kolkhozes and sovkhozes and at other enterprises for nonagricultural purposes. However, the objectively continuing population growth will inevitably involve a reduction in the area of arable land per resident in the country.

Material and technical resources. Capital equipment on kolkhozes, at interfarm enterprises, on sovkhozes and on other state farms in the country during the period from 1970 through 1979 alone increased 2.2-fold. During the same years the capital-labor ratio rose 231 percent. Differences are observed in the level of capital equipment and the capital-labor ratio on the republic's farms. The highest amount of capital per 100 hectares of agricultural land was attained on farms in the Baltic Republics, Moldavia, Belorussia and the Ukraine (from 130,000 to 232,000 rubles and the lowest, in the Turkmen, Kazakh and Kirghiz Republics (only from 6,000 to 30,000 rubles). Gross plant and livestock output on the same area totaled 66,000 to 113,000 and 4,000 to 14,000 rubles.

The value of capital per average annual worker is the lowest on farms in the Transcaucasian Republics, as well as Tajikistan, Turkmenistan and Uzbekistan. Therefore, annual labor productivity is only 3,400 to 3,700 rubles of gross output per worker there, as compared to 6,700 or 9,400 rubles in the Baltic Republics, where the capital-labor ratio is the highest. Undoubtedly, zonal natural conditions, specialization of agriculture and other factors, in particular provision with material and technical facilities, affect the level of efficiency of utilization of land and labor resources. Their growth with a balanced and efficient utilization is a factor increasing the "return" of land and labor resources and enabling agriculture to compensate for the outflow of manpower.

At the session of the general meeting of the USSR Academy of Sciences in December 1978 academician I. I. Lukinov pointed out that, to compensate for the decrease in labor and land resources and to attain the forecast volumes of output, it is necessary to approximately quadruple the value of capital. However, the chief thing lies not in the quantitative, but qualitative, aspect of the matter and in the provision of agriculture with individual machines, as well as with a set of machine systems and chemical and other facilities especially designed for highly intensive technologies with preset parameters of the quantity, quality and production costs of agricultural products.

At present this is not done for various reasons, including the insufficient development of the sectors of the agroindustrial complex that supply agriculture with material and technical facilities of industrial production. The November (1979) and October (1980) Plenums of the CPSU Central Committee set the task of eliminating the isolation of agriculture from many other national economic sectors connected with it and of ensuring a balanced nature and their organic unity.

A further increase in capital investments in agriculture, as well as in an accelerated development of the sectors of the agroindustrial complex associated with it, will intensify qualitatively new tendencies in agricultural production manifested in an increase in the role of intensive factors and will ensure a rise in gross output mainly on the basis of an increase in the yield of agricultural crops and the productivity of animals. However, in each specific case the strengthening of the material and technical base of agriculture should be combined with the implementation of a set of organizational-economic and social measures. In particular, during the 11th Five-Year Plan the development of an overall program for a reduction in manual labor in all national economic sectors is envisaged at the level of a state assignment among the most important object programs.

Taking into consideration that during the 11th and 12th Five-Year Plans the "second echo" of the war will be manifested and the natural increase in labor resources is expected to be extremely limited, every farm, proceeding from local conditions, is deeply interested in working out and fully implementing the program for a reduction in manual labor and disengagement of manpower on the basis of an increasing volume, qualitative improvement and efficient utilization of material and technical resources made available to agriculture.

Thus, an analysis of the sector's resources leads to the general conclusion that during the period until the year 2000 the country's agriculture will develop under conditions of an inevitable decrease in labor resources, further reduction in the per-capita area of arable land and considerable growth of the volumes of material and technical facilities. The reduction in the area of arable land per resident in the country will be made up for by an increase in the productivity of land areas on the basis of an increase in the yield of agricultural crops and the reduction in the number of workers, by an accelerated rise in the productivity of labor with its technical equipment. All this will make it possible to accomplish the task of increasing the volumes of agricultural output both from a unit of area and per capita.

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AGRO-ECONOMICS AND ORGANIZATION

DEVELOPMENT OF VEGETABLE, FRUIT SUBCOMPLEX DISCUSSED

Moscow PLANOVOYE KHOZYAYSTVO in Russian No 11, Nov 81 pp 86-91

/Article by N. Smetanin, deputy chief of a division of the USSR State Planning Committee: "Overall Planning of Production of Fruit and Vegetable Products"/

/Text/ A set of measures for the intensification of the production of fruit and vegetable products and grapes was implemented during the period following the March (1965) Plenum of the CPSU Central Committee. The areas of cultivation of vegetable crops on irrigated land, from which 64.4 percent of the gross output of vegetables in the public sector was obtained in 1979, were almost doubled during those years. The application of mineral fertilizers increased and industrial production technologies began to be introduced. Industrial hothouse facilities were developed widely.

In fruit growing and viticulture small unproductive orchards and vineyards were replaced with large industrial intensive-type plantations. The proportion of fruit bearing orchards among perennial plantations increased sharply. The total area of fruit and berry crops was reduced from 3.6 to 3.5 million hectares and that of fruit bearing plantations rose from 1.5 to 2.4 million hectares.

Large-scale work on the concentration of these sectors on specialized farms and in associations, as well as on the intensification of intrafarm specialization, was done. Measures for production intensification made it possible to greatly expand the production of fruit and vegetable products. In 1979 all farm categories obtained 27.2 million tons of vegetables and 16.3 million tons of fruits, berries and grapes, as compared to 17.6 and 8.1 million tons respectively in 1965. However, the attained level of gross output and its quality and assortment do not meet the needs of the population and the processing industry. The per-capita consumption of this output grows slowly. The increase in per-capita consumption of vegetable crops in 1979, as compared with 1970, totaled only 11 kg and of fruits, 3 kg. Owing to the limited assortment of fruit and vegetable products there is a shortage of cauliflowers, peppers, eggplants, radishes, garlic, green crops, stone fruit crops, berries, winter varieties of apples and table varieties of grapes on the market.

The losses of products are still considerable. For example, in 1979 the per-capita production of vegetables was 103 kg, whereas their consumption together with melons and products imported within the framework of the division of labor among CEMA members was 95 kg. Therefore, not all the produced products reach the consumer. A significant part is lost during transportation, storage, industrial processing and sale, or, not accepted by procurement officials, is fed to livestock.

This situation is due to many reasons. The sharp lag of the material base of enterprises and organizations for the procurement, transportation, storage, processing and sale of fruit and vegetable products and the lack of correspondence of their production and economic relations to the existing division of labor is a decisive reason.

In turn, the indicated reasons are the consequence of the insufficient overall and balanced nature of planning and of the lack of coordination of the interests of interacting enterprises under conditions of departmental independence, which negatively affects the results of the production of other types of agricultural products. Therefore, their elimination is one of the priority tasks. In the 1970's economic scientists and practical workers in agriculture persistently searched for the ways and means of solving it. The development of the theory and practice of agroindustrial integration, formation of the national economic agroindustrial complex and on this basis provision of the necessary proportionality and balance of interconnected production units were the results of the search.

At present the concept of formation of the national economic agroindustrial complex is generally acknowledged, like the need for the search for the appropriate forms of its planning and management, and is reflected in generalized form in Basic Directions in the Economic and Social Development of the USSR for 1981-1985 and for the Period Until 1990, where provision is made to ensure a unified planning and a proportional and balanced development of the sectors of the agroindustrial complex, improvement in economic relations among sectors and organization of their efficient interaction for an increase in the production of agricultural products and for an improvement in their preservation, transportation, processing and delivery to the consumer.

The overall approach to the planning of the development of the agrarian sphere of the economy began to be clearly manifested after the decisions of the March (1965) Plenum of the CPSU Central Committee. Since that time assignments for the sale of farm and livestock products to the state, as well as an allocation, balanced with the production volumes necessary for this, of all the most important types of resources (equipment, mineral fertilizers, chemical plant protection agents and concentrated feed from state resources) and of capital investments for the purchase of machinery and equipment, establishment of perennial plantations and construction of projects for production and nonproduction purposes, have been approved in five-year and annual plans for the development of agriculture.

The preparation by the country's scientific institutions of an overall program for scientific and technical progress and its social and economic consequences (the agroindustrial complex section), which contains scientific substantiations for the prospects for the development of the appropriate sectors for 20 years, is the next practical step in the overall elaboration of problems connected with the development of the agroindustrial complex. In our opinion, this program can be called the first element in the overall planning being formed. It is not of a directive nature, but, being the preplan stage of work, becomes an important guideline for the subsequent elements in the overall planning of the agrarian sphere, that is, the food program developed in the USSR for the first time and the unified plan for the development of the national economic agroindustrial complex, whose preparation was also first envisaged by the Methodological Instructions for the Elaboration of State Plans for the Economic and Social Development of the USSR.

The task of developing the food program was advanced at the October (1980) Plenum of the CPSU Central Committee. At that time the content of the food program and its place in the system of national economic plans was determined in the most general form. In connection with this L. I. Brezhnev said the following in his speech at the plenum: "It is a question of a program that is to link together problems connected with the development of agriculture and of the industrial sectors servicing it, procurement, storage, transportation and processing of agricultural products and development of the food industry and of trade in foodstuffs... The food program should be prepared so that it can become an organic component of the 11th Five-Year Plan."[1] As noted in the accountability report of the CPSU Central Committee to the 26th party congress, the food program is developed for a radical solution of the problem of food supply for the population. "... Its object is to solve the problem of a regular supply of products for the population in as short a time as possible."[2] On the basis of this the food program should be determined as a set of social-economic, production, scientific, personnel, organizational-economic and other assignments and measures balanced in resources, executors and periods of implementation (attainment) and aimed at maximally shortening the time for meeting the population's needs for food products according to scientifically substantiated norms.

Two big interconnected sections are developed as part of the food program of the country and of the Union republics and at other levels of management:

the totality of assignments and indicators characterizing the volumes of production, directions in the utilization and level of consumption of the most important food products, development of the material base of agroindustrial production and directions and scale of introduction of the achievements of science and advanced practice;

the totality of measures whose realization should ensure the attainment of the program's assignments.

The first section of the program is developed according to specific forms and indicators throughout the country and in territorial terms. This is the consolidated section of the country's food program and of the food programs of the Union and autonomous republics, krays and oblasts.

The second section of republic (oblast and so forth) food programs and of the program of the country as a whole is noted for a great diversity reflecting the differences in the natural and economic conditions of food production throughout the country's zones and administrative regions, in the attained level of consumption of the most important food products and in the approach to the selection of the methods and means of solution of the food problem during the forthcoming period.

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1. L. I. Brezhnev, "Rech' na Plenume Tsentral'nogo Komiteta KPSS 21 Oktyabrya 1980 Goda" /Speech at the Plenum of the CPSU Central Committee on 21 October 1980/, Moscow, Politizdat, 1980, p 7.

2. "Materialy XXVI S'yezda KPSS" /Data of the 26th CPSU Congress/, Moscow, Politizdat, 1981, p 45.

The diversity of measures for an expansion of food production in the country's various regions simultaneously presupposes their internal unity, which is ensured by an overall approach to the development of these measures and by a balance in the scale and time of solution of the totality of problems from the production to the sale of agricultural products. This signifies development of the food program in terms of product subcomplexes (grain, fruit and vegetable and other subcomplexes) encompassing sectors and subsectors for the production, processing, transportation, storage and sale of specific types of agricultural raw materials and the products of their processing (milk, dairy products, fresh and canned vegetables and so forth), as well as enterprises for the production and delivery of specific means of production for them. The basic work on the optimization of the proportions and improvement in the balance of development of all the links of a unified technological process aimed at ensuring the correspondence of the internal structure of every subcomplex and its individual parts to the ultimate interests of the functioning of the agroindustrial complex is carried out within the framework of such subcomplexes. Such an orientation at the present stage in the development of the agroindustrial complex signifies maximization of the production of agricultural raw materials, as well as their fuller utilization and on this basis increase in the output of the end product. We will show this, using as an example the elaboration of proposals for the development of the fruit and vegetable subcomplex.

The object of the development of the fruit and vegetable subcomplex during the 11th Five-Year Plan and during the period until 1990 is to ensure a level of consumption of potatoes and vegetables by the population in accordance with scientifically substantiated norms and to bring the level of consumption of fruits much closer to it. At the same time, the task of meeting the population's demand for potatoes and vegetables in all the country's economic regions both as a result of their local production and delivery from other regions and, to a small extent, through the import of vegetable products is set.

The development of the fruit and vegetable subcomplex will continue through the maximum possible intensification of the production of vegetables, fruits, grapes and potatoes, a fuller utilization of land and material and labor resources and the delivery of all the produced products meeting the needs of customers to consumers. During the planned period the transfer of vegetable growing to irrigation will be completed in agricultural production and intensive-type, new orchards will be established and unproductive plantations will be reconstructed in horticulture.

The constant outflow of manpower from rural areas requires an accelerated mechanization of the most labor intensive processes in vegetable and potato growing, viticulture and horticulture, the cutting of perennial plantings and the gathering and sorting of the harvest. The prerequisites for a subsequent provision of overall mechanization and for a large-scale introduction of industrial production technologies will be created during the 11th Five-Year Plan and during the period until 1990.

In practice, the entire increase in the production of vegetables, fruits and berries during the 11th Five-Year Plan will be obtained as a result of an increase in the yield without an expansion of sown areas and fruit bearing plantations.

New types of canning--production of quick frozen fruits, berries and vegetables, aseptic canning, juice concentration, production of semifinished products for public dining, storage of raw materials with the use of cold and active ventilation and industrial waste processing--will be developed in the canning industry, which, on the whole, will be developed at outstripping rates as compared with an increase in the production of fruit and vegetable raw materials.

There will be an improvement in the distribution of the production of fruit and vegetable products as a result of its outstripping development in a number of the country's southern regions. This is connected with the fact that the bioclimatic and economic (availability of manpower) potential exceptionally favorable for the development of the fruit and vegetable industry has not been utilized sufficiently in many southern regions up till now.

During the 11th Five-Year Plan, while the total growth of the production of fruits and berries in the country, as compared with the actual level of 1976-1980, will be 1.2-fold, in the Moldavian SSR their output will be increased 1.7-fold and in the Georgian SSR, 1.5-fold. Vegetable production will be increased at the highest rates in the Georgian, Uzbek and Kazakh SSR and in some other republics.

The problem of meeting the population's needs for fruit and vegetable products should be solved in large measure as a result of a reduction in their losses through a fundamental reconstruction of the entire system of delivery of products from the field to the consumer. Our calculations show that with an improvement in the preservation of vegetables and melon crops and a reduction in their expenditure on nonfood purposes the per-capita consumption of this group of products at the present level of production can be increased by more than 10 kg. For the solution of this problem it is advisable to implement a number of measures for strengthening the material and technical base of the indicated system:

To equip kolkhozes, sovkhozes and procurement, trade and other enterprises and organizations with containers and packaging materials, as well as with facilities for the mechanization of loading and unloading operations;

to expand container and other advanced forms of transportation of products;

to develop specialized transport and to efficiently combine its use with public transport;

to increase the capacities of modern storage facilities up to volumes making it possible to store all the products intended for this;

to build specialized retail trade enterprises fitted with refrigerating chambers and equipment ensuring the preservation of the commodity qualities of fruit and vegetable products at the concluding stage of their sale.

At present the state of the material and technical base of the fruit and vegetable subcomplex does not ensure a full preservation of products in terms of quantity and quality. Additional capital investments are needed to strengthen it.

Therefore, the decisions of the 26th party congress envisaged a priority allocation of capital investments and material resources for ensuring the preservation of products. To execute these decisions, the calculations for the food program envisage increasing the capacities of storage facilities for vegetables, fruits and potatoes to volumes with which the need for storage facilities can be fully met by the end of the planned period.

It should be noted that right now the total area of storage facilities at the enterprises and organizations of the system of the USSR Ministry of Agriculture, the USSR Ministry of Fruit and Vegetable Industry, the USSR Ministry of Trade and the Central Union of Consumer Societies approaches the volumes of output placed in storage. However, owing to the lack of departmental coordination, in some places capacities are underutilized and in others their shortage is felt.

In other words, the lack of departmental coordination leads to a significant increase in the need for storage facilities. In connection with this the country's scientific institutions and the USSR Ministry of Fruit and Vegetable Industry will have to work out proposals for an efficient combination of the volumes of output placed in storage in places of production and consumption, bearing in mind a full utilization of the capacities of storage facilities regardless of their departmental subordination, of the labor resources of urban and rural areas and of production waste, as well as a reduction in the losses of products and in transportation costs. It is advisable to build storage facilities at enterprises of a different departmental subordination and to store products according to a scheme uniform for the entire country, which envisages the most efficient distribution of storage facilities over the country's territory and according to departmental subordination.

According to our calculations, the construction of storage facilities according to a uniform scheme, as compared with the existing departmental approach to this problem, will make it possible save approximately 1.5 billion rubles of capital investments.

Container transport and the provision of kolkhozes, sovkhozes and other enterprises and organizations with modern types of transport containers are important means of reducing the losses of fruit and vegetable products. During the 10th Five-Year Plan Moldavia's experience showed that, as a result of the use of containers alone, the losses of fruits and vegetables were lowered by 7 percent and the labor expenditures on loading and unloading operations, to one-half or one-third. Boxes made of polymeric materials and of moisture-proof cardboard, thermal shrinkage film and other advanced types of packaging materials are not only more economical as compared with ordinary wood containers, but also ensure a better preservation of the transported products, make it possible to raise the standard of labor and production and meet the needs of the most demanding customer. Specific measures for a significant improvement in meeting the needs for transport containers are envisaged in the food program.

Specialized transport is a weak unit of the fruit and vegetable subcomplex. At present only a negligible part of the fruit and vegetable products are transported by refrigerated trucks. In order to preserve the consumer properties of fruits, berries and vegetables and to sharply reduce their losses, in the next few years

it is advisable to increase such transport operations to approximately 40 percent of all the market allocations of fresh products, for which it is necessary to greatly expand the pool of refrigerated trucks, isothermal railroad cars and river vessels.

Improvement in production and economic relations between the producers and consumers of products will be of great importance for an accelerated movement of products from the field to the consumer. It is primarily a matter of basically changing over to a direct acceptance of products by procurement officials in the places of their production.

Beginning with the 11th Five-Year Plan assignments for a local transfer and acceptance of products are set for kolkhozes, sovkhozes and procurement organizations and the necessary material resources and capital investments are allocated for an organization of transfer and acceptance centers, their technical equipment, construction of access roads and so forth. A procedure, according to which products placed in long-term storage by kolkhozes and sovkhozes will be credited to their fulfillment of the plan for state purchases in the year of the actual sale, has been established. These measures will accelerate the transition to improved forms of sale of products ensuring the delivery of products of a better quality and their preservation.

The organization of the USSR Ministry of Fruit and Vegetable Industry and its local bodies will have a positive effect on the regulation of relations between the producers and consumers of fruit and vegetable raw materials.

In some socialist countries (for example, in Hungary) the price system is used as an efficient means of regulating relations between the producers and consumers of fruit and vegetable products. There consumer cooperative enterprises engage in the procurement and sale in retail trade of the bulk of fresh fruit and vegetable products. One such enterprise unifying a large fruit and vegetable wholesale base and retail network meets 50 percent of the needs of Budapest's 2 million residents for vegetables, fruits and potatoes. Fruit and vegetable products are sold to the population by this enterprise at so-called daily prices, which are fixed by an order of the general director of this enterprise every day for the following day. Prices are determined depending on the supply offered by the suppliers of products for the following day, existence of surplus at the enterprise and the population's demand. Prices in effect at that time in the stores of state farms and cooperatives, as well as on the market, are also taken into consideration.

The procurement price is set approximately at the level of 70 percent of the retail price.

If, owing to unfavorable weather conditions, the public sector and the population obtain a low harvest of a certain type of product, retail and, accordingly, procurement prices rise. On the other hand, even if the harvest is low, agricultural enterprises cover their expenditures on the production of products and their economic interest in production expansion is maintained.

The production of fruit and vegetable products increases considerably during favorable years. Retail prices lower than the usual prices increase the capacity of the market and the possibility of selling the grown products. A procedure obliging

procurement officials to accept all the fruit and vegetable products offered by cooperatives and state farms was in effect in the country before 1980. Now this obligation is extended to only 10 percent of the products obtained in excess of the volumes envisaged in the contract. The procurement official has the right to reject the remaining products. However, state farms and cooperatives are reimbursed for the value of the unaccepted products from the reserve fund created from the budget.

This experience should not be mechanically transferred to our country's conditions, but it would be advisable for the USSR Ministry of Fruit and Vegetable Industry to experimentally check a number of variants of decentralization of the fixing of purchase and retail prices of perishable fruit and vegetable products, bearing in mind the provision of flexibility and effectiveness in price formation.

The practical realization of the assignments and measures contained in the food program, as well as the allocation of the necessary material resources and capital investments, will be envisaged for each planned period by a unified plan for the development of the national economic agroindustrial complex. For its development special divisions were established in the USSR State Planning Committee and the state planning committees of some Union republics. Furthermore, the divisions of agriculture existing there had already previously planned not only the development of agricultural sectors, but also of the production and technical servicing of kolkhozes and sovkhozes carried out by the enterprises and organizations of the State Committee for Supply of Production Equipment for Agriculture and the All-Union Scientific Production Association for Agrochemical Services to Agriculture, of reclamation construction and in a number of republics of food, mixed feed and microbiological industries as well.

Of all the problems connected with the development of a unified plan for the development of the agroindustrial complex we will single out only three, which, in our opinion, are the most important:

First, a system of balanced calculations, including an intersectorial balance developed in connection with the national economic agroindustrial complex, balances of production capacities, balances of capacities for the storage of agricultural products regardless of their departmental subordination, balances of gross resources of vegetables, fruits and potatoes, and so forth, should become the basic tool ensuring the necessary proportions in the development of the sectors and subsectors of the agroindustrial complex;

second, fully preserving sectorial plans as production regulators, it is necessary to take into consideration that the most important indicators of the development of sectors forming part of the agroindustrial complex, at the same time, will become indicators of the unified plan for the development of this complex;

third, the determination of the goals and most general proportions in the development of the agroindustrial complex, as well as the most important intersectorial problems subject to solution during the planned period, should precede the development of sectorial plans and predetermine the distribution of material resources among the sectors of the complex.

Significant changes in the planning of the fruit and vegetable subcomplex are made at the sectorial level in connection with the organization of the USSR Ministry of Fruit and Vegetable Industry. For the purpose of creating conditions for a balanced development of all the units of the subcomplex it has been established that capital investments and the necessary material resources for the development of the material and technical base of all the enterprises and organizations of this ministry, regardless of their sectorial subordination (agricultural, procurement, industrial processing, trade, transport and so forth), are allocated to it in the plan in a separate line in the sector "agriculture." The USSR Ministry of Fruit and Vegetable Industry itself will determine the distribution of funds and resources among sectors on the basis of the need to further increase output, as well as to ensure its preservation, intensified processing and delivery to the consumer.

For the same purposes the indicators of material and technical supply, profit and others (except for purchases of agricultural products) in the plans for the economic and social development of the USSR are established directly for the USSR Ministry of Fruit and Vegetable Industry with an inclusion of all types of activities and distribution at its suggestions throughout the ministries of fruit and vegetable industry of the Union republics.

Assignments for purchases of agricultural products in the plans for the economic and social development of the USSR, as before, will be established for the Union republics. However, for the types of products of basic specialization of the USSR Ministry of Fruit and Vegetable Industry (potatoes, vegetables, melon crops, fruits, berries and table grapes), of the total volume of purchases, at the suggestions of the councils of ministers of the Union republics and the USSR Ministry of Fruit and Vegetable Industry, the volumes of purchases of the indicated types of products at the enterprises of its system are singled out in the plan.

An integrated planning of the fruit and vegetable subcomplex at national economic and sectorial levels requires a similar approach to planning at the level of direct production at enterprises and production associations of the agroindustrial type. At present at the indicated enterprises and associations the planning of agricultural production, processing of raw materials, trade and other types of activities is organizationally and systematically carried out in accordance with the procedure in effect in the appropriate sectors. This gives rise to noncoincidence of the interests of the subdivisions of one enterprise or of enterprises of a production association and to a different direction in the indicators of evaluation of their activity and unjustifiably complicates production planning.

The preservation of such a situation will weaken the positive effect of the organizational unity of agroindustrial production. Therefore, the development of specific proposals for the procedure of the planning of agroindustrial production as a single whole is one of the priority tasks of the USSR Ministry of Fruit and Vegetable Industry, to which most agroindustrial enterprises and production associations with an inclusion of trade in their structure are subordinated. The indicators and forms of the plan, the procedure of their preparation and approval and report documents should direct all the units of agroindustrial production toward an efficient attainment of final results.

An overall planning and management of the fruit and vegetable industry at all levels is an important factor in an improvement in food supply in the country.

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